

State Office of Administrative Hearings



Cathleen Parsley
Chief Administrative Law Judge

March 29, 2010

Les Trobman, General Counsel
Texas Commission on Environmental Quality
P.O. Box 13087
Austin Texas 78711-3087

Re: SOAH Docket No. 582-09-2005; TCEQ Docket No. 2009-0033-AIR; In Re: Application of Las Brisas Energy Center, LLC for State Air Quality Permit; Nos. 85013, HAP48, PAL41, and PSD-TX-1138

Dear Mr. Trobman:

Enclosed are copies of the Proposal for Decision (PFD) prepared in the above-referenced matter. You will note that we are not presenting a proposed order to the Commission at this time, because it is unclear how the Commission may proceed with an outcome in this case. In particular, there are at least four different ways in which it appears the Commission possibly could proceed in this case: the Commission may (1) deny the application; (2) grant the application; (3) remand the application; or (4) issue a report setting forth its concerns and give the applicant an opportunity to correct those concerns. The basis for this conclusion is set out below.

This is an air permitting case, in which a preconstruction permit is being sought under TEX. HEALTH & SAFETY CODE ANN. § 382.0518. Under subsections (d) and (e) of that statute, an applicant is given an opportunity to correct certain deficiencies. In such a situation, the Commission is required to issue a "report" rather than an order.¹ It is not clear what such a report may look like, but the PFD in this case may satisfy the requirements for such a report. The ALJs have been unable to find any authority specifically addressing TEX. HEALTH & SAFETY CODE ANN. § 382.0518(d) and (e), and the parties have not fully briefed it. Thus, the ALJs are not certain that those subsections apply to this case or, if they do, exactly what they may require.² The parties have not fully briefed which of these outcomes they believe are legally supportable under the recommendations contained in the PFD. Therefore, the ALJs believe it would be appropriate to have the parties brief, through exceptions, the Commission's different possible methods of handling this case. Then, if deemed appropriate or otherwise requested by the Commission, the ALJs can prepare findings of fact and conclusions of law consistent with their recommendations in the PFD for any order or report the Commission may issue.

¹ TEX. HEALTH & SAFETY CODE ANN. § 382.0518(d).

² For example, subsection (d) states that a report is required if "the Commission finds that the emissions from the proposed facility will contravene the standards" of the chapter. However, the ALJs have not necessarily found that the emissions will contravene the chapter, but rather that the applicant has not met its burden of showing compliance with all of the preconstruction requirements.

March 29, 2010

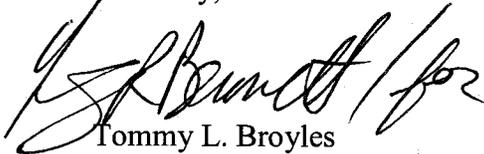
Page 2

Any party may file exceptions or briefs by filing the documents with the Chief Clerk of the Texas Commission on Environmental Quality no later than April 19, 2010. Any replies to exceptions or briefs must be filed in the same manner no later than April 29, 2010.

The above-referenced matter will be considered by the Texas Commission on Environmental Quality on a date and time to be determined by the Chief Clerk's Office in Room 201S of Building E, 12118 N. Interstate 35, Austin, Texas.

This matter has been designated **TCEQ Docket No. 2009-0033-AIR; SOAH Docket No. 582-09-2005**. All documents to be filed must clearly reference these assigned docket numbers. All exceptions, briefs and replies along with certification of service to the above parties shall be filed with the Chief Clerk of the TCEQ electronically at <http://www10.tceq.state.tx.us/epic/efilings/> or by filing an original and seven copies with the Chief Clerk of the TCEQ. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,



Tommy L. Broyles
Administrative Law Judge



Craig R. Bennett
Administrative Law Judge

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AGENCY: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
(TCEQ)

STYLE/CASE: APPLICATION OF LAS BRISAS ENERGY CENTER, LLC FOR
STATE AIR QUALITY PERMIT; NOS. 85013, HAP48, PAL41, AND
PSD-TX-1138

SOAH DOCKET NUMBER: 582-09-2005

TCEQ DOCKET NUMBER: 2009-0033-AIR

STATE OFFICE OF ADMINISTRATIVE HEARINGS	TOMMY L. BROYLES ADMINISTRATIVE LAW JUDGE
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**SOAH DOCKET NOS. 582-09-2005
TCEQ DOCKET NOS. 2009-0033-AIR**

APPLICATION OF LAS BRISAS	§	BEFORE THE STATE OFFICE
ENERGY CENTER, LLC FOR STATE	§	
AIR QUALITY PERMIT;	§	OF
NOS. 85013, HAP 48, PAL41, AND	§	
PSD-TX-1138.	§	ADMINISTRATIVE HEARINGS

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PROPOSAL FOR DECISION

I. INTRODUCTION

On May 19, 2008, Las Brisas Energy Center, LLC (Applicant or LBEC) filed an application with the Texas Commission on Environmental Quality (TCEQ or Commission) for State Air Quality and federal Prevention of Significant Deterioration (PSD) permits to construct four electric generating units (EGUs) and related facilities in Corpus Christi, Nueces County, Texas (the Facility). The EGUs are designed to burn petroleum coke (pet coke) using circulating fluidized bed (CFB) boilers to generate electricity.¹ LBEC proposes to use various emissions control technologies, including limestone injection, a selective non-catalytic reduction system, a polishing scrubber, a fabric filter, and an activated carbon injection system.

On January 7, 2009, the Executive Director (ED) of the TCEQ issued the draft permit. The draft permit was revised on June 11, 2009, in accordance with the ED's review of public comment. The case was directly referred to the State Office of Administrative Hearings (SOAH) for a contested case hearing, and a preliminary hearing was held on February 17, 2009, in Corpus Christi, Texas. The hearing on the merits convened before Administrative Law Judges (ALJs) Tommy L. Broyles and Craig R. Bennett on November 2, 2009. Over 70 persons and entities sought and received party status. The following parties or aligned groups of parties appeared and participated in the hearing:² (1) LBEC; (2) the Sierra Club; (3) Environmental Defense Fund (EDF); (4) Texas Clean Air Cities Coalition (CACC); (5) Clean Economy Coalition (CEC); (6) Citizens for Environmental Justice (aligned with CEC); (7) the Medical Group, consisting of

¹ LBEC Ex. 1, at 7.

² Because there were so many parties, the ALJs list only the party representatives or representative groups.

numerous individual doctors and medical societies; (8) Roger Landress; (9) the ED; and (10) the Office of Public Interest Counsel (OPIC). The hearing concluded on November 12, 2009, and the record closed on February 1, 2010, after written closing arguments were filed.

LBEC urges that the permits should be issued. The ED has requested that the matter be remanded for further consideration of the proposed material handling operations. All other parties, including OPIC, request the application be denied. For purposes of efficiency, all of these parties requesting denial are sometimes collectively referred to as "Protestants." After considering the evidence and arguments presented, the ALJs conclude that there remain unresolved issues which preclude the granting of the permits at this time. Therefore, the ALJs recommend that the permits either be denied or remanded back to the ED for additional actions to be taken.

In particular, the ALJs conclude that the following deficiencies exist in LBEC's application:

- No analysis was done regarding the maximum achievable control technology (MACT) to be used by LBEC for its pet coke-fired CFB boilers;
- LBEC failed to properly account for secondary emissions;
- LBEC failed to properly account for emissions from material handling; and
- LBEC improperly adjusted the moisture content of the petroleum coke handled at the Port of Corpus Christi under POC 9498 in violation of the United States Environmental Protection Agency (EPA) and TCEQ modeling guidance, resulting in unreliable emissions modeling.

In addition, the ALJs conclude that numerous other changes would have to be made before the permits could issue, including adjusting the emissions limits for total particulate matter (PM and PM₁₀), Mercury, Carbon Monoxide, and Sulfuric Acid Mist, pursuant to best available control technology (BACT) requirements. These other changes do not necessarily require a remand, however.

II. APPLICABLE LAW

Under TEX. HEALTH & SAFETY CODE § 382.0518(b), the Commission shall grant a permit to construct a facility such as that proposed by LBEC if the Commission finds:

- (1) the proposed facility for which a permit . . . is sought will use at least the best available control technology, considering the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the facility; and
- (2) no indication that the emissions from the facility will contravene the intent of this chapter [the Clean Air Act], including protection of the public's health and physical property.

Under the Commission's rules—particularly 30 TEX. ADMIN. CODE § 116.111—an applicant for an air quality permit must include in its application information which demonstrates that emissions from the facility will meet the requirements for the best available control technology (BACT) (with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility) and that the proposed facility will achieve the performance specified in the permit application.

Further, the Commission's rules at 30 TEX. ADMIN. CODE § 116.160, regarding prevention of significant deterioration (PSD), provide requirements with which each proposed new major source in an attainment or unclassifiable area must comply. Those requirements include 40 Code of Federal Regulations (C.F.R.) § 52.21(k) (a federal requirement adopted by reference), concerning source impact analysis. In relevant part, 40 C.F.R. § 52.21(k) states the following:

Source Impact Analysis. The owner or operator of the proposed source. . . shall demonstrate that allowable emission increases from the proposed source. . . , in conjunction with all other applicable emission increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of:

- (1) Any [national ambient air quality standard (NAAQS)] in any air quality control region; or
- (2) Any applicable maximum allowable increase over the baseline concentration in any area.

In addition to the requirements set out above, the Protestants contend that LBEC is required to demonstrate compliance with the case-by-case maximum achievable control technology (MACT) standards set out in both state and federal law. Like BACT, MACT is designed to be technology-forcing, to ensure that newly-issued permits require the lowest achievable emissions of hazardous air pollutants in newly-issued permits. Both the EPA and the TCEQ have provided a definition for MACT emissions limits in their rules. Those definitions provide that MACT emissions limits must be as stringent as the emission limitation achieved in practice by the best controlled similar source, and must reflect the maximum degree of reduction in emissions that the permitting authority determines is achievable.³ LBEC disagrees that it is required to conduct a MACT analysis for its CFB boilers. However, as addressed in detail later in this PFD, the ALJs find that a MACT analysis is required for the pet coke-fired CFB boilers proposed in this case.

Therefore, in total, these various requirements make it clear that the requested permits must be protective of human health and property, must use maximum achievable control technology, and must not cause or contribute to air pollution in violation of the NAAQS or the maximum allowable increase over baseline concentrations. It is with these applicable requirements, among others, in mind that we now turn to the specific issues raised by the parties.

³ See 40 C.F.R. § 63.41 and 30 TEX. ADMIN. CODE § 116.15. The TCEQ's definition mirrors the EPA's.

III. OVERVIEW

A. Description of the Application

LBEC's permit application seeks approval for construction of a circulating fluidized-bed (CFB) steam electric generating facility (Facility), consisting of four 300-megawatt (MW)(nominal output) pet coke fired boilers.⁴ The steam will be routed to two single-turbine generator sets. The Facility will also include various and associated ancillary equipment, such as two natural gas-fired auxiliary boilers, two propane-fired vaporizers, two diesel-fired emergency generators, a diesel-fired water pump, four diesel-fired water booster pumps, four diesel-fired boiler feed water pumps, two cooling towers, thirteen atmospheric storage tanks, pressurized anhydrous ammonia storage tanks, piping component fugitives, and various material handling facilities for pet coke, limestone, lime, soda ash, sand and combustion by-products (fly ash and bottom ash.)

The control technologies proposed include limestone injection directly into the boilers to reduce sulfur dioxide emissions, selective non-catalytic reduction to reduce nitrogen oxide emissions, a polishing scrubber to further reduce acid gas emissions, and a fabric filter to reduce particulate and metals emissions.

B. Issues to be Addressed

This case involves a direct referral to SOAH for a contested case hearing. Therefore, the Commission has not listed specific issues to be resolved. Instead, LBEC has the burden of showing compliance with all applicable state and federal standards by a preponderance of the evidence. As a practical matter, the contested issues are framed by the Protestants who, through evidence and arguments, identify the principal areas of concern with the proposed permits. But,

⁴ LBEC Ex. 3, at 1.

the burden of proof remains on LBEC to show it has satisfied all applicable standards and that all requirements have been met for issuance of the permits.

The following are the primary arguments advanced by the Protestants in opposition to the permits:

- Pet coke-fired CFB boilers are subject to case-by-case MACT requirements, but the necessary MACT analysis was not performed by LBEC or the ED;
- Secondary emissions from material handling were not properly considered by LBEC, in violation of 40 C.F.R. § 52.21(k) and TCEQ Rules;
- LBEC failed to properly analyze PM_{2.5} emissions;
- LBEC failed to prove compliance with applicable federal and state regulations because its dispersion modeling was insufficient and contained numerous inaccuracies; and
- LBEC has not shown that the Facility will meet standards achievable by the best available control technology (BACT).

These issues are discussed in detail below, along with the other less significant issues raised by the parties in this proceeding.

IV. DISCUSSION

A. MACT Analysis

1. Overview and Recommendation

The issue presented is a novel one, and arguably involves both legal and policy issues. Ultimately, after considering the arguments and evidence, the ALJs conclude that it is appropriate to require a MACT analysis for the pet coke-fired boilers in issue in this case. The boilers will be significant emitters of hazardous air pollutants (HAPs), just like coal-fired and

oil-fired boilers for which a MACT analysis is required. In fact, in its BACT arguments, LBEC concedes that it seeks higher emissions limits for a number of pollutants for its pet coke-fired boilers than some other coal-fired boilers have. To conclude that a MACT analysis is not required under the Clean Air Act, the ALJs would have to find that Congress specifically excluded pet coke-fired boilers from the MACT requirements and that EPA specifically excluded pet coke-fired boilers from the 2000 listing decision. But, the ALJs do not find that the evidence or legal authorities support such findings. Because a finding that no MACT analysis is required would be contrary to the very purposes of the Clean Air Act and would require an inconsistent approach to interpreting the statutes and rules involved, the ALJs decline to make such a finding absent clear and specific direction from Congress or the EPA.

The issue is made difficult because the legal authority involved does not directly address pet coke-fired boilers clearly. If one uses a strict constructionist approach to interpreting the legal definitions involved, then LBEC appears correct that pet coke-fired boilers are not coal-fired or oil-fired boilers. Thus, they would not be subject to the EPA's 2000 listing decision requiring a case-by-case MACT analysis for EGUs. But, using a similar strict constructionist approach, pet coke is not included within the definition of a "fossil fuel" either, so the boilers in issue would not be "fossil-fuel fired" boilers. Thus, they would not be considered electric utility steam generating units for purposes of determining whether they were exempt from the application of the MACT rules in the first place. Instead, they would be industrial, commercial, or institutional boilers, for which a MACT analysis is required.

On the other hand, if one takes a technical engineering approach to understanding the definitions, it would be acceptable to conclude that a pet-coke fired boiler is a fossil-fuel fired boiler—as the experts in this case accept. But, applying that same technical engineering approach, then there would also be absolutely no technical reason to exempt pet coke boilers from the MACT analysis required for all other major new sources that will produce significant amounts of HAPs. In fact, the only basis for not subjecting pet coke boilers to a MACT analysis is by applying a very strict legal reading of the rules involved. Such a strict reading is not

supportable unless it is also applied to the definition of fossil fuels. The basis for this conclusion is discussed in detail below.

2. Background

The federal Clean Air Act (CAA) implements stringent protective standards for the control of HAPs from new major sources.⁵ In particular, CAA § 112(g)(2)(B) provides:

[N]o person may construct ... any major source of hazardous air pollutants, unless the Administrator [of the U. S. Environmental Protection Agency] (or the State) determines that the maximum achievable control technology emission limitation under this section for new sources will be met. Such determination shall be made on a case-by-case basis where no applicable emission limitations have been established by the Administrator.

Thus, sources covered under Section 112 of the CAA are subject to a MACT review. Like BACT, MACT is designed to be technology-forcing, to ensure that new technologies are utilized to obtain the lowest achievable emissions of pollutants in newly-issued permits.

As noted above, both the EPA and the TCEQ have provided a definition for MACT emissions limits in their rules. Specifically, 40 C.F.R. § 63.41 provides:

Maximum achievable control technology (MACT) emission limitation for new sources means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source.⁶

⁵ CAA Section 112, 42 U.S.C. § 7412.

⁶ As noted, the TCEQ's definition is found at 30 TEX. ADMIN. CODE § 116.15 and mirrors the EPA's definition.

In implementing its statutory mandate for MACT analyses, Congress explicitly excluded “electric utility steam generating units” (*i.e.*, EGUs for purposes of this section) from regulation under § 112 of the CAA unless and until EPA found that regulation of EGUs was necessary and appropriate after conducting a study of HAPs from such units. EPA did subsequently find it appropriate to regulate coal-fired (arguably including pet coke) and oil-fired EGUs under § 112 and, accordingly, now requires a MACT analysis for such units. In light of the statutory mandate, EPA adopted regulations in 2000 (2000 listing decision)⁷ to implement the case-by-case MACT determination contemplated in § 112(g)(2)(B).⁸ When the EPA has not promulgated a MACT standard for a covered source category, any new major source or modification in that source category must undergo this case-by-case MACT review.⁹ Coal-fired and oil-fired EGUs, as well as “industrial, commercial, and institutional” boilers, are currently subject to a case-by-case MACT review.¹⁰

No MACT review was done for the CFB boilers in LBEC’s application. LBEC concluded that the applicable rules and statutes did not require a MACT analysis, because the CFB boilers were not “coal-fired” or “oil-fired,” but instead would primarily use pet coke. LBEC contends pet coke is a fossil fuel (another point of contention), but is not coal or oil; therefore, a MACT analysis is not required. Protestants disagree that no MACT analysis is required for pet coke-fired boilers. They argue that a MACT analysis is essential because pet coke-fired boilers produce significant amounts of HAPs, and it would be an absurd result to conclude that no MACT analysis is required. They further point out that pet coke is included in several EPA definitions of coal.¹¹

⁷ 65 Fed. Reg. at 79,826 and 67 Fed. Reg. at 6522, 6524.

⁸ It should be noted that the 2000 listing decision was reversed by EPA in its 2005 delisting decision where all EGUs became exempt from regulation under CAA § 112, but were then regulated under CAA § 111. However, EPA’s 2005 delisting was vacated by the D.C. Circuit Court of Appeals, once again putting EGUs under the purview of CAA § 112 and subject to MACT regulations.

⁹ CAA § 112(g)(2)(B)(3), 42 U.S.C. § 7412(g)(2)(B)(3), and CAA § 112(j)(5), 42 U.S.C. § 7412(j)(5).

¹⁰ *NRDC v. EPA*, 489 F.3d 12 (D.C. Cir. 2007); *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008).

¹¹ Discussed further and cited below.

The ED had internal discussions about whether to conduct a MACT analysis and ultimately decided not to. OPIC argues that a MACT analysis is required. Moreover, it appears that the EPA believed a MACT analysis was necessary as well. In a letter to TCEQ in February 2009, EPA provided information to assist TCEQ in developing its “case-by-case §112(g) MACT standard for the LBEC.”¹² That letter from the EPA stated that the “TCEQ is the permitting authority required to make the section 112(g) MACT determination for the construction of the LBEC.”¹³ The EPA letter then identified three separate MACT issues in regard to LBEC’s CFB boilers. Thus, there is a clear disagreement among the parties—and possibly among the regulatory authorities—as to whether a MACT analysis is required for the CFB boilers in issue.

The primary questions leading to this disagreement are whether pet coke is a fossil fuel and, if pet coke is determined to be a fossil fuel, whether it is included under the definitions of coal or oil in EPA’s 2000 listing decision requiring a MACT analysis for coal-fired and oil-fired EGUs. The arguments of the parties are thus divided into a consideration of these two issues.

3. Is Pet Coke a Fossil Fuel?

a. LBEC’s Arguments

LBEC performed no MACT analysis because it contends that the applicable statutes and rules do not require one for pet coke-fired boilers. First, LBEC points out that the CFB boilers it proposes will be capable of producing more than 25 megawatts and will serve a generator that will produce electricity for sale. As such, LBEC asserts the boilers are EGUs, as opposed to industrial, commercial, or institutional boilers. An EGU is defined as “any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale.”¹⁴

¹² Tr. at 158-159; Sierra Club Ex. 405.

¹³ Tr. at 158-159; Sierra Club Ex. 405.

¹⁴ 42 U.S.C. § 7412(a)(8).

LBEC contends that pet coke is a fossil fuel, both from a practical and a regulatory perspective. From a practical perspective, LBEC notes that the experts at hearing, Shanon DiSorbo, Ranajit Sahu, and Randy Hamilton all testified that pet coke is derived from crude oil and is related to the production of petroleum. From a regulatory perspective, LBEC offers that pet coke must be considered a fossil fuel because to find otherwise as related to the regulation of EGUs would conflict and act to exclude pet coke-fired boilers from regulation under the EPA's Acid Rain Program.

LBEC explained that, in Title IV of the CAA, EPA was required to regulate the combustion of fossil fuels in an effort to curtail the effects of acid rain. Similar to the provision of § 112 of the CAA presently at issue, Title IV failed to include a definition for fossil fuel, but EPA provided a definition when the acid rain program was enacted in 1993. There, EPA defined a fossil fuel as, "natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material."¹⁵ LBEC notes that EPA clearly understood Congress' intent was to include pet coke, a solid fuel derived from petroleum, in this program. Having so defined pet coke as a fossil fuel for purposes of the acid rain program, LBEC asserts EPA must have had the same understanding concerning the MACT program.

Further, LBEC notes that, when EPA proposed MACT standards for coal and oil EGUs in 2004, fossil fuels were proposed to be defined as, natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat."¹⁶ Clearly then, fossil fuels were not defined to just include coal and oil but rather included many other fuels, such as natural gas and fuels like pet coke that are derived from petroleum for use as a fuel. For these reasons, LBEC asserts pet coke is a fossil fuel.

¹⁵ 40 C.F.R. § 72.2 (LBEC Ex. 53).

¹⁶ 69 FED. REG. at 4727 (Jan. 30, 2004).

b. Protestants' Arguments

As an initial matter, Protestants agree with LBEC, that pet coke may be considered a fossil fuel, but argue that it is included in the 2000 listing decision as a subset of coal. However, this portion of Protestants' argument is addressed in the next section pertaining to whether pet coke is included under the definition of coal in EPA's 2000 listing.

As an alternative, Protestants argue that, if EPA actually did intend to exclude pet coke-fired boilers from its 2000 listing decision, it did so only because it understood pet coke not to be a fossil fuel and pet coke-fired boilers to fall under a different source category—namely, the “industrial, commercial, and institutional” boilers category—for which a MACT analysis would also be required. Protestants reason that this also makes sense, because the EPA had previously and explicitly found that pet coke was not a fossil fuel.

In a memo from 1983, the EPA was asked whether pet coke was a fossil fuel for purposes of the NSPS rules. In that memo, an EPA director stated, “[s]ince petroleum coke is a by-product and is not produced for the purpose of creating useful heat, it cannot be considered a fossil fuel.”¹⁷ That determination received the concurrence of the EPA's Office of General Counsel, the Control Programs Development Division, and the Emission Standards and Engineering Division.¹⁸ Thus, if pet coke was not a fossil fuel—as EPA had previously opined—then pet coke-fired boilers would not be EGUs for purposes of the MACT analysis statutes and rules. Accordingly, Protestants contend it would be logical for EPA to not have included pet coke-fired boilers in the listing decision for EGUs, because they were included in the “industrial, commercial, and institutional boilers” category for which a MACT analysis is required.

¹⁷ Sierra Club Ex. 418.

¹⁸ Sierra Club Ex. 418.

c. ALJs' Recommendation

As noted above, EGUs are defined as “any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale.” Therefore, pet coke-fired boilers are EGUs only if pet coke is a fossil fuel. But, fossil fuel is defined as “natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel *derived from such materials for the purpose of creating useful heat.*”¹⁹ Thus, a fuel that is derived from coal or oil but not for the purpose of creating a fuel for useful heat would not meet this definition. Because pet coke is not explicitly enumerated in the list of fuels, it is included as a fossil fuel only if it is “derived [from the enumerated materials] for the purpose of creating useful heat.”

The undisputed opinions of all experts who testified, consistent with prior EPA determinations, is that pet coke is not derived for the specific purpose of creating useful heat. Rather, it is a byproduct of the oil refining process for which a useful benefit has been found. But, the useful benefit (*i.e.*, the use of pet coke as a fuel) is not the purpose for its production or derivation. Thus, it does not strictly meet the legal definition of a fossil fuel. As noted previously, EPA reached this same conclusion, as demonstrated by an interpretive memorandum it issued concluding that, because pet coke was not derived for the purpose of making useful heat, it was not a fossil fuel.²⁰

However, since the time of the EPA interpretive memo, the use of pet coke as a primary fuel for boilers has increased. Similarly, it appears the technical application of pet coke has shifted somewhat over time, with its increased use as a fuel. So, from a technical standpoint, the experts appear to agree that it should be considered a fossil fuel because its characteristics and

¹⁹ 40 C.F.R. § 60.41. (emphasis added)

²⁰ Sierra Club Ex. 418.

use as a fuel are comparable to other fossil fuels.²¹ Thus, the ED's air permit reviewer opined that pet coke is a fossil fuel.²²

The ALJs tend to agree with this more practical approach. Given its use as a fuel in large-scale boilers, and the fact that it is derived from another fossil fuel—petroleum—the ALJs find it reasonable to conclude now that pet coke is a fossil fuel. But, this conclusion is based upon “common sense” (as the ED's witness, Mr. Hamilton, puts it), and not specifically upon the strict legal definition of “fossil fuels” given in the applicable rules. Rather, if one were to strictly follow those rules, the EPA's own prior conclusion that pet coke is not a fossil fuel would be the result. There is no dispute that pet coke—even today—is not derived *for the purpose* of creating useful heat.

If the Commission concludes that pet coke is not a fossil fuel, as EPA previously did, then the analysis stops. The pet coke-fired boilers in this case would not be “fossil fuel fired” and thus not EGUs. As such, they would be industrial, commercial or institutional boilers for which a MACT analysis is absolutely required. However, if the Commission agrees with the ALJs that a common sense approach is appropriate and finds that pet coke is a fossil fuel, then pet coke-fired boilers would be “fossil fuel fired” and EGUs under the CAA. This then would require the Commission to turn to the next question—namely, whether pet coke-fired boilers are subject to the EPA's 2000 listing decision. But ultimately, whether the Commission takes a “strict legal approach” or instead takes a “common sense approach” to this issue, so long as that approach remains consistent when considering both questions raised, the outcome is the same: LBEC should have performed a MACT review. To show why, the ALJs now analyze the second question presented.

²¹ Or, as ED expert Randy Hamilton testified, “as a common sense matter, yes, petroleum coke is derived from fossil fuel. . . so, it's a common sense answer; it is a fossil fuel.” Tr. at 1878.

²² Tr. at 1878 and 1937.

4. Are Pet Coke-Fired Boilers Subject to the EPA's 2000 Listing?

In the CAA, Congress did not immediately require a MACT analysis for EGUs, but rather directed the EPA to conduct a study of EGUs and to report back to Congress. Further, EPA was directed by Congress to regulate EGUs (including the requirement of a MACT analysis) if EGUs were found to emit pollutants in a way that contravened the CAA. Specifically, Congress directed the EPA Administrator to do the following:

The Administrator shall perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units of pollutants listed under subsection (b) after imposition of the requirements of this Act. The Administrator shall report the results of this study to the Congress within 3 years after the date of the enactment of the Clean Air Act Amendments of 1990. The Administrator shall develop and describe in the Administrator's report to Congress alternative control strategies for emissions which may warrant regulation under this section. The Administrator shall regulate electric utility steam generating units under this section, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study required by this subparagraph.²³

By 2000, the EPA had concluded its analysis and adopted its listing decision, concluding that coal-fired and oil-fired EGUs were significant emitters of HAPs and subject to the case-by-case MACT analysis requirements. In the EPA's rules relating to EGUs, however, the definition of coal does not directly include pet coke. Specifically, 40 C.F.R. § 60.41Da—which establishes the standards for “Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978”—defines coal as follows:

Coal means all solid fuels classified as anthracite, bituminous, sub bituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17) and coal refuse. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal (not meeting the definition of natural gas), coal-oil mixtures, and coal-water mixtures are included in this definition for the purposes of this subpart.

²³ 42 U.S.C. § 7412(n)(1)(A).

That definition does not include pet coke. However, this may or may not be particularly persuasive because, as noted above, when this rule was initially implemented, pet coke was not considered a fossil fuel by EPA. It is not surprising, then, that pet coke was not included in a regulation concerning EGUs when pet coke was seen only as a byproduct and not produced for the purpose of creating useful heat. However, also as discussed above, the practical aspects of pet coke as a fuel have evolved and other EPA rules adopted later have included pet coke within the definition of coal.

For example, 40 C.F.R. § 60.41b establishes the standards for “Industrial-Commercial-Institutional Steam Generating Units” and defines coal as follows:

“Coal means all solid fuels classified as anthracite, bituminous, sub bituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and *petroleum coke*. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of this subpart.” (emphasis added)

Similarly, 40 C.F.R. § 60.41c, which establishes the standards for “Small Industrial-Commercial-Institutional Steam Generating Units,” defines coal in the exact same manner. With this definition of coal, it is undisputed that in both sections of the C.F.R., pet coke-fired boilers are within the definition of “coal-fired” industrial, commercial or institutional steam generating units for which a MACT analysis is required.

In 40 C.F.R. § 63.7575, which establishes the National Emissions Standards for Hazardous Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, coal is defined:

“Coal means all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by the American Society for Testing and Materials in ASTM D388-991 T5, “Standard Specification for Classification of Coals by Rank” (incorporated by reference, see §63.14(b)), coal refuse, and *petroleum coke*. Synthetic fuels derived

from coal for the purpose of creating useful heat including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures, for the purposes of this subpart. Coal derived gases are excluded from this definition.” (emphasis added)

Again, pet coke is included in the definition of coal.

So, on numerous occasions, EPA has defined coal to include pet coke for purposes of including pet coke-fired boilers as coal-fired boilers for purposes of requiring a MACT analysis or other regulation. But, this definition is not contained within the rules relating to EGUs. The importance of this is construed differently by the parties, and their arguments are discussed below.

a. LBEC’s Arguments

LBEC argues that the fact that pet coke was included in the definition of coal in other rules, but not in the rules requiring a MACT analysis for coal-fired EGUs indicates a clear intent by EPA to exclude pet coke-fired boilers from the case-by-case MACT analysis requirements. According to LBEC, this is further bolstered by a preamble to rules proposed by EPA after it initially decided to require a MACT analysis for coal-fired and oil-fired EGUs in 2004. Specifically, in that preamble, the EPA identified pet coke as a “non-regulated fuel” and indicated that no emissions limitation would be established for it.²⁴ Based upon the definition of coal, the exclusion of pet coke from that definition in the rule requiring a case-by-case MACT analysis for coal-fired EGUs, and the EPA’s own comments indicating an understanding that pet coke is not a regulated fuel, LBEC argues that pet coke-fired boilers were not included in the EPA’s 2000 listing decision requiring a MACT analysis.

²⁴ 60 FED. REG. at 4674.

b. Protestants' Arguments

Protestants point out that the underlying purpose of a MACT analysis is to address new sources of significant amounts of HAPs. To do so, the CAA and/or the EPA's 2000 listing decision (done pursuant to the CAA) require a MACT analysis for utility boilers—which include coal-fired and oil-fired boilers—and for “industrial, commercial, and institutional boilers.” When EPA decided to require a MACT analysis for coal-fired and oil-fired boilers in 2000, it did so because they were “significant emitters of HAPs.”²⁵ In contrast, EPA specifically chose not to require a MACT analysis for natural gas-fired boilers because they were not significant emitters of HAPs.²⁶ Protestants note that pet coke-fired boilers are significant emitters of HAPs—including many of the exact same HAPs produced from coal and oil—and therefore there is absolutely no regulatory or technical reason they should be excluded from the MACT analysis requirements.

Moreover, Protestants contend that it is highly illogical for EPA to specifically exempt pet coke-fired EGUs when a MACT analysis is required for the typically much smaller pet coke-fired boilers that would be classified as “industrial, commercial, and institutional boilers.” Since the stated purpose for requiring a MACT analysis is to address major sources of air pollutants, it makes little sense to require such an analysis for smaller boilers, but then not require it for a major power plant boiler that is fired by pet coke—a significant source of HAPs. Because numerous definitions in the EPA's air quality rules include pet coke in the definition of coal, Protestants argue that it is logical to assume that EPA intended “coal-fired” boilers in its 2000 listing decision to include pet coke-fired boilers.

Protestants argue that LBEC's position in this case—that LBEC's proposed CFB boilers are utility boilers but are not coal-fired or oil-fired, so they are not subject to a MACT analysis—is simply untenable. Whether pet coke is considered within the definition of coal, resulting in pet

²⁵ EDF Ex. 311, at 79826.

²⁶ EDF Ex. 311, at 79827 and 79831.

coke-fired boilers being classified as coal-fired boilers, or whether pet coke-fired boilers are “industrial, commercial, and institutional boilers,” Protestants assert the outcome is the same—a MACT analysis must be performed for them. Because no MACT analysis was performed, LBEC’s application is allegedly deficient and must be denied at this time.

c. ED’s Position

The ED’s arguments are very brief on this issue. The ED concedes that there may be no technical reason to treat pet coke-fired boilers differently than coal-fired or oil-fired boilers, but argues that the issue is regulatory and not technical. The ED points to the TCEQ’s rules—namely 30 TEX. ADMIN. CODE 116.402(a)—that state the requirements of the TCEQ’s MACT rules “do not apply to electric utility steam generating units unless and until such time as these units are added to the source category list under Federal Clean Air Act §112(c)(5).” Because pet coke-fired EGUs are not specifically listed under Section 112(c)(5), the ED contends that they are not subject to the case-by-case MACT analysis requirements. Of course, this is predicated on the assumption that pet coke-fired boilers are not included within the EPA’s 2000 listing decision.

d. ALJs’ Recommendation

LBEC’s application is for an air quality permit for an EGU which, by definition, requires the use of a fossil fuel-fired combustion unit.²⁷ The “Standards of Performance for Fossil Fuel Fired Steam Generators” (Standards) define fossil fuel as “natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel *derived from such materials for the purpose of creating useful heat.*”²⁸ That same section defines coal to mean “all solid fuels classified as anthracite, bituminous, sub bituminous, or lignite by ASTM D388.”²⁹ The experts appear in agreement that

²⁷ 42 USC § 7412(a)(8).

²⁸ 40 CFR § 60.41. (emphasis added)

²⁹ Id.

at least when initially enacted, this regulation did not presume pet coke to be a fossil fuel. Rather, it was simply a byproduct of the petroleum refining process. Over the years, though, the prevalence of pet coke as a fuel has grown. Now, the same experts agree that, although pet coke remains a byproduct of the refining process, it is generally accepted to be a fossil fuel.

As previously discussed, LBEC argues that Congress' intent in the Acid Rain program was to include petroleum coke, while not specifically defined, as a solid fuel derived from petroleum and argues that EPA did just that in its Acid Rain program. In that program, EPA defined fossil fuels as, "**natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material**" and LBEC insists pet coke is a solid derived from petroleum.³⁰ Applying that same logic as to whether pet coke should be included in the MACT analysis requirements, the ALJs note that fossil fuel is defined exactly the same in 40 C.F.R. § 60.41Da—which establishes the standards for EGUs, except for the final six words. Here fossil fuels are defined as, "**natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material** *for the purpose of creating useful heat.*" While, as noted above, the ALJs do not object to a more practical approach to those words in italics, they maintain that LBEC's argument that the Acid Rain language clearly suggests an intent to include pet coke must be equally applied in relation to the MACT rules, EGU Standards, and the EPA's 2000 listing decision. In using such a practical, common sense approach, the ALJs conclude that the EPA's 2000 listing decision must be read as encompassing pet coke-fired boilers.

In fact, it appears that EPA has wrestled with the correct treatment of pet coke over the years. In numerous proposed revisions to 60.41Da (and as seen in other rules), the EPA has modified its proposed treatment of pet coke, explicitly including it within the definition of coal at times and then including it within the definition of petroleum at other times—and then removing

³⁰ 40 C.F.R. § 72.2 (LBEC Ex. 53).

it from each at times.³¹ At the times relevant to this hearing, pet coke was not explicitly included in either of those definitions.³²

Given the history of EPA's handling of pet coke, it is easy to conclude that, from a common sense standpoint, pet coke-fired boilers were intended to be included within the coal-fired and oil-fired boilers that EPA determined should be subject to a case-by-case MACT analysis in its 2000 listing decision. Moreover, the EPA's rationale for regulating coal-fired and oil-fired EGUs supports this conclusion. Specifically, when EPA made the determination to require a MACT analysis for coal-fired and oil-fired EGUs, it did so because those units are "significant emitters of HAPs, including mercury . . ." ³³ In contrast, the EPA declined to require a MACT analysis for natural gas-fired EGUs because "the impacts due to HAP emissions from such units are negligible."³⁴ From an environmental standpoint, pet coke is similar to oil and coal in that its use as a fuel generates significant HAPs—much more than natural gas does. Thus, from an air quality standpoint, it would not make any sense to exempt pet coke-fired EGUs from the same requirements as coal-fired and oil-fired EGUs. The testimony of the ED's expert, Mr. Hamilton, supports this. Specifically, he acknowledged that there was no technical reason why pet coke-fired boilers should be treated differently from coal-fired and oil-fired boilers and exempted from the MACT analysis requirements.³⁵

³¹ See 70 Fed. Reg. 286060, at 28652 (adding pet coke to the definition of coal under 40 C.F.R. § 60.41a); 71 Fed. Reg. 9866, at 9876 (changing the definition of petroleum to include pet coke in 40 C.F.R. § 60.41Da); 71 Fed. Reg. 33388, at 33400 (changing the definition of coal in 40 C.F.R. § 60.41Da and not including pet coke in it); 72 Fed. Reg. 32710, at 32722 (including pet coke within the definition of petroleum in 40 C.F.R. § 60.41Da); and 74 Fed. Reg. 5072, at 5079 (removing pet coke from the definition of petroleum in 40 C.F.R. § 60.41Da).

³² Although the ALJs recognize that one could argue this shows an intent by EPA to exclude pet coke from any regulation, it just as easily shows an intent to regulate it, but an uncertainty as to whether it is treated as coal or petroleum, or an uncertainty as to whether it is even a fossil fuel—as evidenced by the EPA's earlier memo and later communications.

³³ EDF Ex. 311, at 79826.

³⁴ EDF Ex. 311, at 79831.

³⁵ Tr. at 2078.

In fact, given Congress's mandate to EPA to analyze EGUs and to require regulation if EPA determined that EGUs were significant emitters of HAPs, the ALJs conclude that EPA is compelled to require a MACT analysis for pet coke-fired boilers, given its findings that coal-fired and oil-fired boilers are significant emitters of HAPs. As Congress stated in the CAA, the "Administrator *shall* regulate electric utility steam generating units under this section, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study required by this subparagraph."³⁶

It is undisputed that pet coke-fired boilers are significant emitters of HAPs, just like coal-fired and oil-fired boilers. So, once EPA determined that boilers with these types of emissions presented a sufficient environmental concern to require a MACT analysis (as it did with coal-fired and oil-fired boilers), Congress's use of the mandatory phrase "shall regulate" means that similar boilers must be subject to the same type of regulation. While the ALJs recognize that it is EPA's role to make this determination, given the evidence presented to them, the ALJs construe EPA's actions in a manner consistent with their statutory obligation. Therefore, the ALJs conclude that EPA must have intended to subject pet coke-fired boilers to a MACT analysis, so as to be in compliance with their Congressional mandate. And, given the EPA's comments on the application in this case, it appears that EPA believes such an analysis is required.

Unlike natural gas, there is not a sufficient basis to conclude that either Congress or EPA intended to specifically exempt pet coke-fired boilers from the MACT analysis requirements, while subjecting coal-fired and oil-fired boilers to such requirements. The only potential authority cited by LBEC for the proposition that EPA *intended* for pet coke to not be subject to a MACT analysis is the preamble and other language from a rule that was never adopted. As EDF notes in its closing arguments, proposed rules do not represent an agency's considered

³⁶ 42 U.S.C. § 7412(n)(1)(A). (emphasis added)

interpretation of its statute and are entitled to no deference.³⁷ This is particularly true when compared against the EPA's own interpretive memorandum indicating petroleum coke was not a fossil fuel under the 112(g) definitions, and the EPA's recent memo indicating that a MACT analysis was required for the pet coke-fired boilers proposed in LBEC's application. Given all of this evidence, the ALJs simply cannot conclude that either Congress or the EPA intended to treat pet coke-fired boilers differently than coal-fired or oil-fired boilers in regard to protecting air quality.

Absent evidence of a specific intention to treat pet coke-fired boilers differently from coal-fired or oil-fired boilers, the ALJs must interpret the applicable regulations consistently. If one uses a strict legal interpretation, then pet coke is not included in the pertinent definitions of "coal" or "fossil fuels" under section 112 related to EGUs. Therefore, LBEC's proposed pet coke-fired boilers would be considered industrial, commercial, or institutional boilers under section 112, for which a case-by-case MACT analysis is required. On the other hand, if one applies a technical understanding (*i.e.*, a "common sense" understanding as ED expert Randy Hamilton phrased it), then pet coke is considered a fossil fuel and pet coke-fired boilers may be considered coal-fired or oil-fired for purposes of subjecting them to the MACT analysis requirements. This is because pet coke is a major source of HAPs, just like coal and oil, and has been included within the definition of coal and petroleum at different times in EPA's rules.

Either way, the ALJs find there is no justification for not requiring a MACT analysis for the pet coke-fired CFB boilers in issue. In fact, it would be an absurd result to find that EPA intended to subject smaller pet coke-fired boilers (such as industrial or commercial boilers) to a MACT analysis, but not larger ones. Because no MACT analysis was performed for the boilers, LBEC's application is deficient and must either be denied or remanded to the ED for further technical review to cure this deficiency and to ensure that the emission limits and/or technology used to achieve those limits represent the maximum achievable control technology.

³⁷ See *Clay v. Johnson*, 264 F.3d 744, 750 (7th Cir. 2001)[citing *Commodity Futures Trading Comm'n v. Schor*, 478 U.S. 833, 845 (1986)].

B. Secondary Emissions from Materials Handling

1. Applicable Rules

A review of this issue must start with 30 TEX. ADMIN. CODE § 116.160(c)(2)(B), where the Commission adopts by reference the federal PSD regulations found at 40 C.F.R. § 52.21(k).³⁸ This C.F.R. requires:

(k) *Source impact analysis.* The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, *in conjunction with all other applicable emissions increases or reductions (including secondary emissions)*, would not cause or contribute to air pollution in violation of:

- (1) Any national ambient air quality standard in any air quality control region; or
- (2) Any applicable maximum allowable increase over the baseline concentration in any area.³⁹

Then, for purposes of our discussion, the analysis turns to the definition of “secondary emissions” found at 40 C.F.R. § 52.21(b)(18):

Secondary emissions--Emissions that would occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the source or modification itself. Secondary emissions must be specific, well-defined, quantifiable, and impact the same general area as the stationary source or modification that causes the secondary emissions. *Secondary emissions include emissions from any off-site support facility that would not be constructed or increase its emissions, except as a result of the construction or operation of the major stationary source or major modification.* Secondary emissions do not

³⁸ 30 TEX. ADMIN. CODE § 116.160(c)(2)(B) states that the requirements concerning source impact analysis from prevention of significant deterioration of air quality regulations promulgated by the EPA in 40 C.F.R. § 52.21 are incorporated by reference.

³⁹ Emphasis added. 40 C.F.R. § 52.21(k)(2) is often referred to as the PSD increment.

include any emissions that come directly from a mobile source such as emissions from the tail pipe of a motor vehicle, from a train, or from a vessel.⁴⁰

With these definitions in mind, the ALJs turn to the evidence and arguments.

2. Background Information

LBEC represented in its May 2008 Application that “the materials (such as limestone and petroleum coke) will be transported to the adjacent site operated by Las Brisas Terminal Company, LLC (LBTC). The materials from the LBTC stockpiles will be delivered to the LBEC material handling systems via conveyors, equipped with hoods to reduce the particulate emissions.”⁴¹ Figure 3-2 of the Application shows a conveyor from off-site material storage entering the east side of the plant.⁴²

When the Application and Revised Application were filed, Chase Power Development, LLC (Chase Power-the parent company of LBEC) and Chase Terminal Company, LLC (CTC) planned to develop and operate a commercial bulk terminal facility that would transport some or all of the pet coke and limestone necessary to operate the EGUs.⁴³ This planned bulk terminal company was named “Las Brisas Terminal Company, LLC.” LBEC submitted a revised application in November 2008 that continued this line of planning, suggesting that it would utilize LBTC for a significant portion of material handling activities.⁴⁴

At some point, Chase Power abandoned plans for LBTC. Protestants were advised of this change on September 18, 2009, after Protestants filed a Motion for Summary Disposition

⁴⁰ Emphasis added. Commission Rules contained the same definition at 30 TEX. ADMIN. CODE § 116.160(c)(2) prior to amendment on February 1, 2006. Subsequent to the 2006 amendment, the Commission Rules adopt by reference the federal rules, as noted above.

⁴¹ LBEC Ex. 3, at 25.

⁴² LBEC Ex. 3, at 23.

⁴³ LBEC’s Consolidated Response to Protestants’ Motions for Summary Disposition, at 2.

⁴⁴ LBEC Ex. 6, at 26.

alleging LBEC had failed to consider and account for the anticipated emissions from the LBTC material handling operations. While LBEC's changes were never explicitly indicated by revision to the Application, LBEC did disclose in its pleadings that it now planned to rely on the existing Port of Corpus Christi Authority (POCCA) bulk terminal operation to provide off-site storage and material handling.

The regulations previously discussed, coupled with the facts set forth above, set the stage for the parties' dispute over whether and how Applicant has accounted for secondary source emissions in its PSD modeling.

3. Parties' Arguments

a. LBEC's Arguments and Evidence

LBEC submits it has effectively demonstrated that allowable emission increases from the Facility and any possible secondary emissions will not cause or contribute to air pollution in violation of any NAAQS or PSD increment. In this regard, LBEC appears to have two arguments.⁴⁵ First, it argues that, due to the high level of control devices, no additional secondary emissions will exist, other than as modeled. Second, from a regulatory perspective, LBEC urges that no secondary emissions would exist unless the present permit emission limits for POCCA are exceeded by LBEC's demands for material processing—something LBEC denies will occur. Both of these arguments are discussed below.

LBEC expert Shannon DiSorbo testified that certain control equipment, like fully enclosed tube conveyors, could prevent emissions altogether. He explained that only those emissions reflected in the maximum allowable emission rate table of the permit would be allowed.⁴⁶ Since no emissions are included for a conveyor or other processes for moving the

⁴⁵ LBEC's *Response to Closing Arguments*, at 17; PM is the emission of concern.

⁴⁶ Tr. at 251 and 252.

materials from storage and processing to the material transfer tower at the front end of the facility, Mr. DiSorbo suggested no emissions from these operations may occur.⁴⁷ Relying on these opinions, LBEC urges that the fundamental point to consider on this issue is that the Application does not seek any new or increased emissions from off-site material handling facilities or sources. While Protestants may also urge this as a reason for denial, LBEC dismisses this claim, arguing that no increased emissions are requested, no increased emissions are authorized, and so no increased emissions will occur. In the event that increased emissions are necessary in the future, LBEC maintains that they must be authorized by the Commission at a later date. Thus, LBEC argues that any alleged failure to include emissions from materials handling is not a legal basis for remand or denial.

Second, LBEC insists that the only relevant inquiry is whether emissions from off-site material handling facilities will *necessarily increase* to meet the needs of LBEC. Here, according to Applicant, the evidence establishes that emissions already authorized by the POCCA permits are more than adequate to meet LBEC's needs. LBEC expert Joseph Kupper modeled the permitted emission limits from the existing POCCA Dock 1 and 2 permits in conjunction with the other emissions applicable to the Application and found no exceedances of the relevant PM standards. Having modeled all the emissions that are legally allowed to occur, LBEC alleges it has sufficiently complied with the Commission rules and policy concerning modeling demonstrations and secondary emissions in particular.

Of primary importance to LBEC's position is the presumption that no secondary emissions will occur and that, even if some did occur, they could not amount to more than the baseline emissions LBEC relied on for its dispersion modeling. Put another way, LBEC insists that secondary emissions are only relevant to the extent they would increase the amount of emissions to be modeled. Because Mr. Kupper relied on the emission limits in the POCCA Dock permits to create the baseline emissions (and, thus, when discussing secondary emissions and the

⁴⁷ EDF Ex. 303.

PSD PM Increment), the POCCA Dock permit limits become the linchpin in LBEC's argument. To the extent that all materials handling can be done within the POCCA dock permit limits, then LBEC's modeling may be sufficient. But, on the other hand, if the POCCA dock permit limits are exceeded, then Mr. Kupper's modeling becomes inaccurate. LBEC maintains this is a simple and straightforward issue. Because no increase in emissions beyond those modeled is necessary or even possible (barring a permit amendment by POCCA), the Application should not be denied or remanded on this issue.

LBEC alleges that because this issue is straightforward and easily decided in its favor, Protestants created a straw man by assuming there will be secondary emission increases. Protestants then attacked this straw man, a completely different scenario, rather than addressing the facts laid out in the Application. For instance, LBEC cites to Protestants' reliance on the following discussion/example from the 1990 New Source Review (NSR) Manual:⁴⁸

An example is the emissions from an existing quarry owned by one company that doubles its production to supply aggregate to a cement plant proposed for construction as a major source on adjacent property by another company. The quarry's *increase in emissions* would be secondary emissions which the cement plant's ambient impacts analysis must consider.⁴⁹

Protestants argue that example shows that LBEC's approach is misguided because it did not account for increased emissions at POCCA, whereas LBEC argues the example shows that there must be assumed increased emissions from the secondary source. LBEC asserts that, in the example above, the quarry specifically has an "increase in emissions" above those for which the cement plant's emissions would be modeled absent consideration of secondary emissions. This is allegedly different than the present situation, where LBEC modeled the POCCA docks at full permitted limits and where there can be no additional secondary emissions to model.

⁴⁸ EDF Ex. 102, Draft 1990 New Source Review Workshop Manual, at A-18.

⁴⁹ EDF Ex. 102, at A-18. (emphasis added)

Turning to Protestants' other claims, LBEC disagrees that it is obligated to create and build the LBTC facility. LBEC insists:

. . . despite Protestants' claims to the contrary, from the day the application was submitted to TCEQ to present, Applicant has maintained a consistent position regarding the off-site material handling needs for the LBEC. Specifically, Applicant intends for the petroleum coke, limestone, and other materials required for operation of the LBEC to be supplied by, under, and through the existing POCCA Dock 1 and 2 Permits.⁵⁰

LBEC explains that LBTC was formed only to explore the potential upgrade of the existing bulk terminal operation at the POCCA.⁵¹ Even EDF's own modeler, Mr. Michael Hunt, P.E., admitted that he was aware of no legal authority requiring LBTC to be built.⁵² Moreover, Protestants have provided no such requirement in its legal briefing. LBEC continues that any argument that the POCCA is not legally committed to supply materials to LBEC must also fail as specious, because no such legal requirement exists.

Similarly, LBEC finds Protestants' suggestion that the Application improperly separates one "stationary source" into smaller pieces in order to avoid regulation wholly unsupported. Protestants laid the foundation for their argument by accurately defining a stationary source to include all of the NSR pollutant-emitting activities meeting three criteria: 1) belonging to the same SIC "Major Group" code, (2) located on one or more contiguous or adjacent properties, and (3) under common control. While maintaining its fundamental disagreement that it is legally required to build LBTC, Applicant asserts that even if it were to build LBTC, Protestants must rely on "linguistic gymnastics" to make the stationary source definition applicable. LBEC alleges that Protestants' accusations are flawed because two of the three elements noted above are missing. First, there is no evidence in the record that LBEC and LBTC would be under common control. Second, LBEC asserts the two operations would be under different industrial

⁵⁰ LBEC's Response To Closing Arguments, at 17.

⁵¹ EDF Ex. 301, at 8. It should be noted however that, in its answer to requests for admission, LBEC admitted that some or all of the pet coke or other materials that will be used at the Facility will first be transported to, and stored at, the potential LBTC site.

⁵² Tr. at 811-812.

groupings. According to LBEC's review of the designations, LBTC would come under Industry Group 449 for services incidental to water transportation and SIC Code 4491 for Marine Cargo Handling, whereas LBEC would fall under the Electric Power Generation, Industry Group 491 and SIC Code 4911.⁵³ Accordingly, LBEC and LBTC allegedly would in no way be viewed as one stationary source.

For these reasons, Applicant argues it has met its burden of proof concerning secondary emissions.

b. Protestants' Arguments and Evidence

Protestants contend that LBEC's approach to secondary emissions fails to meet Commission guidance in a number of ways. First, LBEC failed to properly account for material handling and secondary emissions in its Application and then belatedly attempted to amend the Application at the time of hearing. Second, even if the representations made in the Application are ignored, Protestants argue LBEC must account for its secondary emissions at POCCA. They find no exception to the secondary emissions requirements contained in Commission and federal regulations for cases where emissions are authorized under a different permit. Third, even if such an exception were to be carved out in this case, Protestants insist that there is no evidence in the record to support LBEC's claim that the authorized POCCA dock emissions are sufficient to meet the material handling needs of the Facility. And finally, the only modeling of material handling in the record shows exceedances of the short-term PM₁₀ increment. Given this evidence, Protestants maintain the only legally supported conclusion is that LBEC failed to meet its burden of proof and, therefore, the requested permits cannot issue.

Protestants contend that LBEC misses the mark with its last-minute attempt to demonstrate compliance with PSD regulations through its general dispersion modeling of

⁵³ OSHA Standard Industrial Classification System Search, at <http://www.osha.gov/pls/imis/sicsearch.html> (last visited Jan. 11, 2010, by LBEC and Feb. 23, 2010, by the ALJs).

background sources performed when LBTC was still planned. Protestants describe LBEC's efforts as nothing more than an after-the-fact cover-up to address a glaring and fatal deficiency in the Application.⁵⁴ Of significance to Protestants is that, despite its statements that it has maintained a "consistent position regarding off-site material handling," LBEC has actually abandoned the plans it detailed in the Application. Protestants point out that the Application indicates all material handling will take place at the adjacent LBTC site, with the POCCA docks never even mentioned. Moreover, material handling plans prepared long after the Application was submitted to the TCEQ—as late as February 2009—depict new material handling facilities that are in addition to, and distinct from, the existing POCCA docks.⁵⁵ Protestants observe that, even in LBEC's prefiled testimony, the POCCA docks are nowhere to be found.⁵⁶ Rather, the plans submitted by LBEC show that the POCCA docks are located well to the east of the LBTC material handling facilities included in the Application—a fact that allegedly undercuts LBEC's assertion that it has consistently intended to rely on the POCCA docks for material handling.

Changes as significant as this, insist Protestants, should be made by permit amendment so that LBEC will be bound by its representations. If LBEC is allowed to ignore its own application, then Protestants allege there will be no adequate notice, public review, or public comment to these post-application changes. Perhaps even more importantly, Protestants assert the Commission lacks the ability to enforce representations made for the first time at hearing, which are in conflict with or simply not found in the Application itself, if no permit amendment is required. According to Protestants, unless the application is amended to include the POCCA as the source of material, LBEC's statements at hearing are mere conjecture without legal effect.

⁵⁴ Protestants note that this modeling was done as a part of LBEC's background NAAQS and PSD increment modeling, with data out of the TCEQ's Point Source Database. EDF's *Reply to Closing Arguments*, at 13.

⁵⁵ EDF Ex. 103, at 47149; Drawing No. 101, Las Brisas Energy Center Overall Site Plan, dated 11/17/2008. Protestants maintain that similar material handling plans, prepared by LBEC, are dated as late as February 2009.

⁵⁶ See LBEC Ex. 3, at 00025. Section 4.4 of the Application states, in relevant part, "[M]aterial handling facilities will be required for pet coke, limestone, lime, soda ash, sand and combustion by-products (fly ash and bottom ash). The materials will be transported to the adjacent site operated by Las Brisas Terminal Company, LLC (LBTC). The materials from the LBTC stockpiles will be delivered to the LBEC material handling systems via conveyors, equipped with hoods to reduce the particulate emissions."

Assuming that LBEC is held to its representations made in the Application, Protestants argue that emissions from LBTC are part of LBEC's "major stationary source" and cannot be parsed into several applications in order to bypass the secondary-emissions inquiry, only to later add emissions and avoid the PSD and NAAQS reviews altogether.⁵⁷ In accordance with the regulations, a stationary source is defined to include all of the NSR pollutant-emitting activities meeting three criteria: 1) belonging to the same SIC "Major Group" code, (2) located on one or more contiguous or adjacent properties, and (3) under common control.⁵⁸ Protestants urge that LBTC meets all of these criteria as related to LBEC; therefore, the two must be analyzed as a single stationary source.

The Application establishes that the LBTC and LBEC sites are located on adjacent property with LBTC material handling and storage activities connected to the LBEC facilities with a conveyor system.⁵⁹ Protestants insist that the Application and record in this case also establish that LBEC intended to exercise control over LBTC. Conceptual designs for the LBTC site were produced by LBEC and labeled "Las Brisas Energy Center." These included detailed engineering drawings of conveyor systems, the location and size of stockpiles, the type and volume of materials to be processed, the location and size of detention ponds, as well as road designs and other specifications.⁶⁰ Protestants conclude that these material-handling operations fall within the definition of a stationary source and that LBEC must therefore demonstrate that the emissions increases associated with these operations will not cause or contribute to air pollution, when taken into consideration with the other applicable emissions increases from the stationary source.

⁵⁷ Major stationary source is defined as "any stationary source which emits or has the potential to emit 250 tons per year of a regulated NSR pollutant. 30 TEX. ADMIN. CODE §116.160(a) (pre-February 1, 2006 version), 40 CFR § 52.21(b)(1)(i).

⁵⁸ 40 CFR § 52.21(b)(5).

⁵⁹ LBEC Ex. 7, at 00016; Figure 3-2.

⁶⁰ EDF Ex. 103.

LBEC did not offer any modeling of its material handling activities, so Michael Hunt, engineer and air dispersion modeler, modeled the predicted impacts relying completely on the LBEC material handling design and the exact same modeling guidance used by Mr. Kupper.⁶¹ Mr. Hunt testified that the pet coke storage piles, limestone storage piles, and related drop points were all sources of PM₁₀ and must be considered in accordance with PSD regulations, either as part of the LBEC stationary source or as secondary emissions.⁶² He relied on the detailed LBTC plans provided by LBEC and identified the emissions points, including the location of various stock piles, conveyors, drop points, loading operations, and other infrastructure associated with the handling, transportation and storage of materials.⁶³

Examples of these emission sources include two 55-foot high pet coke storage piles (each containing 160,000 tons of pet coke) as well as the rock crushing operations identified in the LBEC preliminary plans. Mr. Hunt then applied the regulatory guidance and emissions factors to calculate emissions from these LBTC sources and modeled them along with the same sources modeled by LBEC. Mr. Hunt noted that LBEC's own modeling, even without LBTC emissions, predicted impacts very close to the regulatory limits for PM₁₀. LBEC's modeling predicted a PM₁₀ ground-level concentration (GLCmax) of 29.7 micrograms/cubic meter (µg/m³)—just barely under the 24-hour maximum allowable PSD increment of 30.0 µg/m³.

Ultimately, relying on Mr. Kupper's modeling of only the facility (predicted maximum off-property impact of 21.1 µg/m³ and adding only the LBTC emissions sources), Mr. Hunt found a PM₁₀ GLCmax of 34.6 µg/m³ when using 1985 data. This is before considering any other background sources of PM₁₀. For the other four years of data considered, the result is similar, with the LBEC and LBTC emissions alone exceeding the PSD increment in three of the four years.

⁶¹ EDF Ex. 100, at 15-21; EDF Exs. 102-108.

⁶² EDF Ex. 100, at 10. Mr. Hunt also included roads as a source of PM₁₀, but for reasons discussed later in the PFD, the ALJs do not include them in this analysis.

⁶³ EDF Ex. 100, at 16.

Mr. Hunt submitted the following table to highlight the “high second high” predicted impacts indicated by the PM₁₀ 24-hour PSD Increment modeling he performed, after including the LBTC emission points. His modeling is compared to that Mr. Kupper performed without LBTC emissions points.⁶⁴

Year of Meteorological Data	Applicant’s Modeling (without LBTC)	Hunt’s Modeling (with LBTC)	PSD Allowable Increment Level
1985	25.3	26.6	30
1986	29.7	34.6	
1988	29.6	31.1	
1990	28.5	29.8	
1991	28.8	31.7	

Protestants charge that Mr. Hunt’s modeling reveals the real reasons why LBEC has abandoned the secondary sources described in its Application and omitted the demonstrations necessary to show compliance with the PM₁₀ Increment as required by 40 C.F.R. § 52.21(k) and 30 TAC §116.160(a). When held to its application, modeling shows that LBEC exceeds the 24-hr PM₁₀ Increment in three of the five years modeled. Protestants note that Mr. Hunt’s modeling is the only modeling that takes into consideration *any* offsite material handling, and his modeling demonstrates clear exceedances of the PM₁₀ Increment. Therefore, Protestants insist that LBEC failed to meet its burden of proof and that the Application must be denied.

In the alternative, if LBEC is allowed to ignore the Application and rely on the POCCA docks for its material handling needs, Protestants maintain the increased emissions experienced by the POCCA docks must then be accounted for in the air quality impacts analysis.⁶⁵ Nowhere

⁶⁴ EDF Ex. 109; EDF Ex. 100, at 27-28.

⁶⁵ National Resources Defense Council, Inc. v. EPA, 725 F.2d 761, 766 (D.C. Cir. 1984).

in applicable law or other regulations do Protestants find authorization for LBEC to carve out an exception from accounting for these emissions simply because they are secondary emissions authorized under another permit—*i.e.*, the POCCA dock permits. Rather, Protestants assert that the Application must be denied because secondary emissions must be considered in the modeling, and LBEC has not done this.

Explaining that their position is not based on a rigid legal interpretation, Protestants maintain that identification and consideration of secondary emissions is an important and necessary part of protecting the environmental. To demonstrate this point, Protestants detailed a scenario where LBEC is granted its present application without further inquiry and then, at a later date, either LBTC or POCCA applies for a permit allowing an increase in PM₁₀ emission so they can adequately handle the material for the then-already-permitted LBEC facility. If this increase in PM₁₀ from the material handling is 4.9 µg/m³ or less, then Protestants point out that no additional PSD increment or NAAQS analysis would ever occur with respect to the full extent of the 24-hour PM₁₀ emissions caused by the LBEC Facility,⁶⁶ because such amount would fall under the *de minimis* or significant impact levels in relation to the definition of secondary sources.

Protestants fear such a scenario will result in PM₁₀ at dangerous levels, particularly given that LBEC's own modeling shows that the Facility, even without accounting for its material handling and secondary emissions, will consume 29 µg/m³ of the 30 µg/m³ short-term PM₁₀ increment.⁶⁷ Thus, Protestants urge that a future application for approval of material handling emissions with an increase of 4.9 µg/m³ of PM₁₀ would lead to the absurd result of no PSD or NAAQS review ever being done—even though total cumulative emissions would clearly exceed the PSD increment. Protestants argue this scenario is precisely why the TCEQ rules preclude such action and require consideration of all secondary emissions with this permit application.

⁶⁶ This is because anything less than 5 µg/m³ is defined as *de minimis*.

⁶⁷ LBEC Ex. 12, Table 7-1; LBEC Ex. 65.

Once again arguing in the alternative, Protestants claim that even if LBEC's approach to modeling is allowed, the Application must still be denied because there is no evidence to support LBEC's claim that the authorized POCCA dock emissions are sufficient to meet its material handling needs. LBEC did not perform the calculations necessary to determine whether the POCCA docks have permitted emissions limits sufficient to handle an additional 7.2 million tons per year of materials—which is the amount Protestants allege are anticipated for the Facility. Moreover, LBEC could not have performed the calculations because it has yet to specify the amount, types, or location of the material handling facilities needed. Changes in the location of the material handling facilities at POCCA could impact LBEC's impact analysis; but, again, this information was never prepared. Protestants assert that, at a bare minimum, LBEC must estimate emissions from its required material handling activities and the projected locations for those activities, and only then determine whether current permit limits for the POCCA docks are adequate to meet LBEC's needs.

Finally, Protestants observe another shortcoming in LBEC's emissions analysis is a lack of information on how 7.2 million tons per year of materials might be transported to the LBEC material transfer tower, particularly now that LBEC ignores the representations in its application that LBTC will be the source of material handling. The evidence shows only a conveyor system running from the once-proposed LBTC site, but it is nowhere near the POCCA docks that LBEC now intends to rely on. Obviously then, the record is also devoid of any modeling by LBEC to assess the emissions impacts related to the transfer of these materials from the POCCA docks to LBEC's Facility.⁶⁸ For these reasons, Protestants urge the Application must be denied.

c. Executive Director's Arguments and Evidence

The ED states that it has not had an opportunity to review the facts surrounding LBEC's claims that there will be no secondary emissions. In particular, the ED has not been provided

⁶⁸ Tr. at 112.

sufficient information to determine whether the POCCA dock permits may process the amount of throughput and allowables authorized by the Application. For this reason, the ED recommends that this portion of the Application be remanded. The ED concurs with LBEC's legal interpretation that, if there are no increases in PM emissions from off-site sources or if the ultimate conclusions from the impacts analysis would not change, then a permit could be issued as far as secondary sources are concerned. However, the ED does not have sufficient information to make such a determination.

4. ALJs' Analysis and Recommendation

The ALJs conclude that LBEC has failed to meet its burden of proof on this issue. In theory, the ALJs agree with LBEC's underlying rationale—namely, that no further inquiry is necessary where modeling has already considered the full extent of secondary emissions. Put another way, if there will be no increase in PM emissions from off-site material handling sources above what was modeled, or if the ultimate conclusions from the impacts analysis would be unchanged by secondary sources, then LBEC would meet its burden of proof on this issue. However, as LBEC attempts to back into its secondary emissions analysis from its modeling of background sources, it must prove that the present POCCA permits could absorb the necessary emissions and that the predicted impacts would be unchanged. Having considered the evidence and arguments of the parties, the ALJs conclude LBEC has simply failed to prove this is true.

First, the ALJs step back to note a “big picture” issue that the ALJs do not specifically address in great detail. It is stated in the Application that LBEC initially intended to construct LBTC and to process its materials through that entity.⁶⁹ Unlike POCCA, LBTC has no existing permit and all of its emissions related to LBEC would necessarily be secondary emissions and

⁶⁹ This is contrary to LBEC's inexplicable assertion that, “Despite Protestant's claims to the contrary, from the day the Application was submitted to the TCEQ to present, the Applicant has maintained a consistent position regarding the off-site material handling needs for the LBEC. Specifically, Applicant intends for the petroleum coke, limestone, and other materials required for operation of the LBEC to be supplied by, under, and through the existing Port of Corpus Christi Authority (“POCCA”) Dock 1 (TCEQ Air Permit No. 47881) and Dock 2 (TCEQ Air Permit No. 9498) authorizations (“Dock 1 and 2 Permits”).” LBEC's *Closing Argument*, at 18.

modeled as such. These emissions would have been in addition to the background emissions modeled from the POCCA. Relatively late in the process, and after public notice and comment, LBEC changed its intentions and now pursue the POCCA route for materials handling. Because of this change, and LBEC's representations on the record, the ALJs do not address issues related to LBTC emissions. Because the ALJs find no legal basis for limiting LBEC's ability to change its provider for material handling and processing, they do not address whether LBTC should have been included in the definition of a stationary source for LBEC nor whether LBTC emissions would have contributed to a condition of air pollution. Rather, the ALJs limit their analysis to LBEC's representation that all offsite materials handling will be done through the POCCA docks.

At the outset, the ALJs address their concern that many of the arguments offered by the parties are obscured by the language used and by the differing definitions applied. This is specifically true in regard to the definition of "secondary emissions." Protestants understand the term "secondary emissions" to include any additional emissions over those presently released by the POCCA. LBEC takes a different view when it uses the term, and claims there will be no secondary emissions created by its Facility. By this statement, the ALJs do not understand LBEC to suggest that its Facility would not, in fact, create any additional material-handling emissions.⁷⁰ Rather, the ALJs interpret LBEC's position to be that secondary emissions, as legally defined, include only those emissions not already considered in its PSD modeling and allowed by an existing permit.

So, LBEC's argument is that its material handling may be wholly and completely processed by the POCCA docks without any increase in emissions over those approved by the present permits for the POCCA docks and already included in LBEC's modeling. Thus, all of these potential emissions were included when LBEC modeled using the maximum permit limits

⁷⁰ See LBEC's *Closing Argument*, at 24, where LBEC states, "While emissions from off-site material handling sources necessarily are predicted to occur, the credible evidence in the record proves that the existing Dock 1 and 2 Permits held by POCCA for existing public bulk terminal operations can accommodate, from an emissions perspective."

for the POCCA docks in its impacts analysis. Accordingly, LBEC considers there to be no secondary emissions, because no emissions above those already permitted are expected from the POCCA docks.

LBEC argues that it is of fundamental importance that its application “does not seek to authorize and will not authorize either new or increased emissions from off-site material handling facilities or sources.”⁷¹ However, the definition of “secondary emissions” undermines LBEC’s position that this is a distinction of any importance. Secondary emissions are those which would occur as a result of the construction or operation of the major source *but that do not come from the applicant’s facility itself*. Rather, they are emissions from offsite support facilities and are limited to those emissions which would not occur *but for* construction and operation of the applicant’s major source.⁷² The ALJs do not understand the secondary source rule to contemplate that an applicant would ever seek approval or authorization in its permit for additional secondary sources at another facility. Rather, its purpose is to bring necessary emissions from other sources into consideration at the time of an applicant’s permitting to make sure that the cumulative impacts of the permitted facility itself—along with emissions from any facilities not subject to the requested permit—will not exceed an applicable standard or increment.

Continuing along these lines, the ALJs are puzzled by LBEC’s reliance on the “legal reality” that any future changes to existing offsite support facilities must be authorized by the TCEQ prior to construction.⁷³ Taken to its extreme, this specious argument could be made for the entire Application. It is tantamount to suggesting that, because LBEC may not operate a facility in violation of any permitted standard, the Application should automatically be granted. To the contrary, applicants seeking a permit from the state bear the burden of proving that

⁷¹ LBEC’s *Closing Argument*, at 17.

⁷² 30 TEX. ADMIN. CODE § 116.160(c)(2) (pre-February 12, 2006 version) now adopted by reference to 40 C.F.R. § 52.21(b)(18).

⁷³ *Id.*

proposed major stationary sources, including certain secondary emissions, will not emit contaminants that exceed the NAAQS and the increments *prior to construction*. Merely restating that the regulations will not be violated because it is illegal to do so is an insufficient and circular argument.⁷⁴ LBEC's burden of proof applies equally, without regard to whether the offsite support and material handling operations will be undertaken by an existing (POCCA) or proposed (LBTC) entity.⁷⁵ LBEC's burden of proof to show compliance with the regulations is not lessened if it chooses to have its material handling managed by POCCA, and its existing facilities, rather than the proposed facilities at LBTC.

It also appears that LBEC seeks to improperly switch the burden of proof in this case by arguing that, "Protestants cannot reasonably argue and, certainly, have not proven that particulate matter emissions from off-site material handling sources will *necessarily* increase to meet the needs of LBEC."⁷⁶ It is not Protestants' burden to prove whether PM emissions from off-site material handling sources will necessarily increase to meet the needs of LBEC. Rather, it is LBEC's burden to prove that emissions from offsite material-handling sources meeting the definition of "secondary sources" will not cause a NAAQS or Increment exceedance.

The question then is whether LBEC has met this burden of proof. The ALJs conclude it has not. The major shortcoming in LBEC's analysis is the insufficiency of evidence indicating that the permitted emission limits for the POCCA docks are sufficient for LBEC's material

⁷⁴ While not wanting to overstate the similarities of the cases, the ALJs do find some relevance in their previous recommendation, adopted by the Commission but overturned in part by the court, suggesting permit terms agreeing to meet the regulatory requirements concerning sight operating plans was sufficient, and that a more detailed showing was not necessary. The court of appeals found that such a mere restatement of the rules was legally insufficient. See *BFI Waste Sys. v. Martinez Envtl. Group*, 93 S.W.3d 570, 578 (Tex. App.--Austin 2002, pet. denied).

⁷⁵ Regarding LBTC, Applicant states, "[I]f there were a proposal to build a new material handling operation to meet the needs of the LBEC—which there is not—those new sources of air contaminants would have to be authorized by the TCEQ prior to construction." LBEC's *Closing Argument*, at 17.

⁷⁶ LBEC's *Closing Argument*, at 19. (emphasis in original)

handling needs.⁷⁷ Without any plans, process flow diagrams, or emission calculations, LBEC failed to meet its burden of proof in this regard. As noted above, simply stating that the emissions cannot legally exceed the POCCA docks' permit limits is insufficient. While the underlying point made is accurate—*i.e.*, emissions from the POCCA may not *legally* exceed the permitted limits—the conclusion or inference that the Application may then be approved does not necessarily follow. The main purpose of the application process is to ascertain whether the Facility (including secondary sources) may be constructed and *fully operated as proposed* without causing or contributing to a condition of air pollution. In this regard, it is no different than if all of the evidence showed that a facility's operation clearly would exceed safe and allowable emissions levels, but the applicant just asked for lower permit limits without showing in any way that its operation could meet those limits. If such representations were enough, then modeling would never be necessary.

In making this determination, it helps to understand LBEC's approach by discussing what its modeling *did not* specifically consider. LBEC's application is markedly different in the area of material handling than the White Stallion application, also pending before the Commission and at SOAH.⁷⁸ The White Stallion application is also for a circulating fluidized-bed steam electric generating facility in Texas that will use pet coke and/or coal-fired boilers. The air quality analysis was overseen and performed by the same person who performed these tasks for LBEC—Mr. DiSorbo. In the White Stallion application, the stockpiles of pet coke and limestone and other material handling and storage processes were specifically accounted for. Not so in the LBEC Application, which contains no emissions factors for storage piles of pet coke or limestone, no emissions factors from the crushers used to prepare the pet coke or limestone, no emissions factors for the conveyors or trucks used to transport the pet coke or limestone, and no emissions factors from the anticipated drop points needed to deliver the materials to and from

⁷⁷ The ALJs are somewhat disadvantaged because the changed application and LBEC's theory on how it proved compliance was not known or addressed by the other parties, including the ED, in prefiled testimony. The ALJs did not fully comprehend what LBEC was attempting to do until after the hearing.

⁷⁸ Application for New Source Review Air Quality Permit by White Stallion Energy Center, LLC., TCEQ Docket No. 2009-0283-AIR, SOAH Docket No. 582-09-3008. EDF Ex. 306.

transport.⁷⁹ LBEC simply identified the emission limits for potential sources of material handling as they presently are permitted by POCCA and then relied on this data to model and ultimately suggest that no exceedances would occur.⁸⁰

To make its analysis, LBEC relied on the background modeling it had already performed with data from the TCEQ's Point Source Database, as adjusted downward for a few nearby permitted facilities like the POCCA.⁸¹ This analysis was substituted for the more-refined secondary emissions modeling discussed above and performed by White Stallion. Other than the now-abandoned LBTC plans and a diagram showing a conveyor belt from LBTC to LBEC, there remain no indications in the record of how LBEC materials would be processed at POCCA nor how the materials would be transported from POCCA to the LBEC material transfer tower.

Yet most damaging to LBEC's secondary emissions evaluation is the lack of proof that the POCCA docks, under their current permits, can legally process the more than 7 million tons per year of pet coke and limestone necessary for LBEC's Facility.⁸² Without this vital piece of information, LBEC's analysis must fail.⁸³ Otherwise, the secondary source rule would be left wholly inapplicable to existing offsite material handling sources. The inquiry would end with background NAAQS and PSD air dispersion modeling of nearby and background sources, without any regard for the particularities of secondary sources.

⁷⁹ Tr. at 112 and 113.

⁸⁰ The POCCA permit limits were adjusted significantly downward for greater moisture content, as discussed more fully below.

⁸¹ LBEC did not use the maximum permitted limits for emission from the POCCA permits as found in the TCEQ Point Source Database, but instead reduced the emissions from POCCA Dock 2 by almost 80% based upon correspondence from the POCCA to the TCEQ concerning the moisture content of its materials. The ALJs find LBEC's action is appropriate as discussed further below.

⁸² Mr. DiSorbo testified that the amount of pet coke and limestone needed on an annual basis would be approximately 4 million and 3.2 million tons per year, respectively. Tr. at 109-110.

⁸³ This does not present a problem with the dispersion modeling used for other purposes. During the initial assessment to determine significant impact area (SIA), secondary sources are not considered.

The ALJs interpret the secondary source rule to require more. If the four criteria for secondary emissions are met—they must be specific, well-defined, quantifiable, and impact the same general area (which the ALJs understand to be the area of SIA)—the rules appear to indicate that the secondary emissions should be considered as if they were emissions from the major stationary source itself.⁸⁴ The evidence in this case establishes that the four criteria are met: the actual increases in emissions are specific, well-defined, quantifiable, and impact the same general areas.⁸⁵ They are from off-site support facilities that would not be constructed or experience an increase in emissions, except for the operations of the stationary source. The ALJs do not believe any party disagrees on this limited point, particularly given that the POCCA dock emissions are remarkably similar to the quarry example in the NSR Manual, as discussed above.⁸⁶

Without direct evidence to support its proposition that the presently permitted POCCA dock emissions are sufficient for its needs, LBEC attempts to cobble together support from bits and pieces of other evidence. In its Reply to Closing Statements, LBEC performs calculations in footnotes and endeavors to show through the hourly throughput limit of the POCCA Dock 2 permit that all the LBEC materials may be processed. LBEC concludes, “the throughput, in tons per hour, modeled by Applicant on an hourly basis at each of the POCCA Dock 2 sources in consideration of the 24-hour PM₁₀ NAAQS and increment modeling, is more than adequate to meet the needs of the LBEC on an hourly and annual basis.”⁸⁷ LBEC notes that the hourly throughput is 1,500 tons per hour and would be annualized to 13 million tons of material.

⁸⁴ The ALJs do not believe that any party challenges that emissions from the POCCA would meet these criteria.

⁸⁵ The ALJs interpret “increase in emissions” to be any additional emissions minus emission decreases.

⁸⁶ Obviously there is great dispute on whether the additional emissions must be calculated separately if they are below the permitted limits for the offsite source. LBEC defines secondary emissions not to include emissions that are within the permitted limits. The ALJs would include those emissions as secondary emissions, but would accept the PSD dispersion modeling as evidence of their predicted impact, if in fact the evidence proved that no emissions would occur beyond the permitted limits.

⁸⁷ LBEC’s Response to Closing Arguments, at 19.

Given the late timing of LBEC's changes in its plans and the calculations made in closing briefs, the ALJs find themselves trying to unpack LBEC's rationale without the usual benefit of review by modeling and engineering experts.⁸⁸ Nevertheless, it appears LBEC has annualized the hourly throughput in violation of the POCCA permit terms. The POCCA Dock Permits No. 1 and 2 are limited to an annual export of materials of 2.8 million and 578,471 tons per year, respectively, for a total annual export of 3,378,471 tons per year. These annual POCCA Dock permit limits suggests that POCCA would not be authorized to process the full 7.2 million tons per year of materials needed by the LBEC facility.

Moreover, the 3.4 million tons per year authorized must include the current throughput processed by the POCCA Docks for entities like Koch Carbon and CITGO. There is no evidence in the record establishing the amount of allowed throughput already consumed by POCCA's present commitments. If POCCA presently processes 99% of the 1,500 tons per hour allowed by its Dock 2 permit, the additional processing of LBEC materials would obviously not be allowed. Thus, it is unknown whether POCCA can add the additional LBEC throughput to that which it already processes on an hourly or annual basis.

Coming back to the legal concerns raised by the ALJs previously, the ALJs do not find it sufficient, from a legal or practical standpoint, for LBEC to defer this emissions accounting while arguing that no exceedance may legally be created by POCCA or, alternately, that any additional permit authorization for POCCA should be reviewed in a later permit amendment process for that entity. The legal ramifications of this approach, effectively eliminating the consideration of secondary sources, have already been discussed. But it should be noted that the ALJs also find it unacceptable from a practical, environmental perspective.

If accounting for those secondary emissions caused wholly by the LBEC source is deferred, it may never happen. As the ALJs understand it, whether the cumulative impacts from

⁸⁸ This is attributable to LBEC's late changes in its plans for material handling and failure to sufficiently address this issue in its prefiled testimony.

primary and secondary emissions from the LBEC source would ever be considered depends upon the determination of POCCA's Area of Impact (AOI). Secondary sources appear to be a mechanism to consider all impacts, even those considered *de minimis*, from two separately owned sources with particular emissions that are closely located.

As noted by Protestants, if POCCA seeks a permit amendment and models impacts below $5 \mu\text{g}/\text{m}^3$ of PM_{10} where LBEC's modeling predicts impacts of $25 \mu\text{g}/\text{m}^3$ or greater, a predicted exceedance would be missed.⁸⁹ The initially modeled impact below $5 \mu\text{g}/\text{m}^3$ for POCCA would allow POCCA to exclude further consideration of that receptor and potentially many receptors where cumulative impact from POCCA and LBEC may predict exceedances. It is reasonable to argue that this discrepancy is at least one of the reasons why consideration of secondary sources (*i.e.*, those meeting the four criteria noted above) is treated differently than other background sources and should be included in the modeling for the major stationary source itself and not put off for later consideration. It is of significance that, while the POCCA emission increases related to LBEC materials meet the four criteria and are secondary source emissions for LBEC, the converse is not true. LBEC emissions would not be secondary source emissions for any POCCA application seeking a permit amendment.

In short, what LBEC proposes to do is to increase material handling of pet coke and limestone by 7.2 million tons per year at the nearby POCCA docks and to transport that material to its proposed facility. It proposes to do so based on an unsupported statement that material handling of its throughput will not exceed the permitted emissions limits for the POCCA docks—even though those limits are currently less than half what LBEC needs for its Facility. Alternately, LBEC argues that, even if POCCA cannot handle all of its material handling needs, the amount of limestone and pet coke processed would legally be restrained to a lesser amount until and unless the TCEQ gave future approval of increased permit limits to the POCCA.

⁸⁹ LBEC claims that the many receptors its modeling results indicate are very close to the regulatory limits is because the refinement and modeling was stopped once the results were below the regulatory limits. While this is potentially true, the modeling showing impacts very close to the regulatory limits is all that the ALJs have in the record by which to evaluate the various and related issues.

Moreover, LBEC urges that this 7.2 million tons per year of material will somehow be transported from somewhere in the POCCA docks to someplace at LBEC's Facility without any emissions. Absent evidence that the transport and dropping facilities will be underground (of which there is no evidence), the ALJs are unconvinced of this.⁹⁰ Instead, the evidence from the White Stallion permit, from the POCCA dock permits, and from the regulatory guidance documents suggests emission factors should be used for the material piles, the conveyors, and the drop points. But, LBEC has simply failed to include these emissions in its Application and has not justified this omission with other credible and substantial evidence necessary to meet its burden of proof. In this regard, the ALJs disagree with LBEC's assertion that any shortcomings in modeling secondary sources would be more than made up for by the conservative nature of its modeling and the over-prediction of impacts caused by the incorrect placement of emission sources by LBEC's modeler.⁹¹ As discussed further below in the modeling sections of the PFD, the evidence does not indicate as much.⁹²

LBEC finally attempts to support its position by noting that Mr. Hunt's predicted 2.35 lbs/hr. for offsite material handling is only 13.12% of the PM₁₀ that Mr. Kupper modeled as allowable under the POCCA permits.⁹³ Yet even if the actual locations of the secondary sources and implications thereto are ignored, the ALJs find no basis for a finding that the 13% increase is so *de minimis* that it may be cursorily excluded from the modeling. It is perhaps relevant at this point that even LBEC's own modeling predicted maximum PM₁₀ baseline concentrations of 29.0 µg/m³ on a 24-hour average, which consumes 97.6 percent of the 30.0 µg/m³ standard.

For these reasons, the ALJs conclude that LBEC simply has not met its burden of proving that it properly modeled all emissions, including material handling emissions and secondary

⁹⁰ Mr. DiSorbo admits the type of conveyor is not decided and not listed in the Application. Tr. at 327.

⁹¹ LBEC's *Closing Argument*, at 24, fn 100.

⁹² The ALJs find more technical evaluation and specific evidence would be needed to make such a determination.

⁹³ LBEC's *Closing Argument*, at 24.

emissions related to material handling, and shown that all applicable air quality standards would be met. Accordingly, the permit should either be denied or remanded to the Executive Director for further technical review.

C. **PM_{2.5} Surrogacy Policy**

In this case, as in other recent cases before the TCEQ, the applicant did not specifically model for PM_{2.5} emissions. Rather, LBEC relied upon the Commission's surrogacy policy, which allows an applicant to demonstrate compliance with PM_{2.5} NAAQS standards by demonstrating compliance with the PM₁₀ standards. Protestants take issue with this approach.

Protestants point to recent EPA determinations indicating that if a surrogacy policy is relied upon certain showings must be made. In particular, Protestants contend that LBEC is required to show:

- a sufficient correlation between the facility's PM₁₀ and PM_{2.5} emissions so as to provide confidence that the statutory requirements will be met for PM_{2.5} using the controls selected through a PM₁₀ NSR analysis; and
- that the degree of control of PM_{2.5} by the control technology selected in the PM₁₀ BACT analysis will be at least as effective as the control technology that would have been selected if a BACT analysis specific to PM_{2.5} had been conducted. To show this, the applicant must establish that the control technology selected through the PM₁₀ BACT analysis is physically the same or provides equal or better control efficiency.⁹⁴

Protestants note that EPA has challenged numerous recent permits in SIP-approved states, including Texas, when there had not been a sufficient showing of the requirements above

⁹⁴ *In re Louisville Gas & Electric Co.*, Order Responding to Issues Raised in April 28, 2008, and March 2, 2008 Petitions, and Denying in Part and Granting in Part Requests for Objection to Permit, at 44-45 (August 12, 2009) (this order is referred to as the "Trimble Order"). This is a decision by EPA Administrator Lisa Jackson objecting to a Title V permit issued in a SIP-approved state, Kentucky. A copy of the order is attached to Sierra Club's closing brief.

to substantiate that PM₁₀ was a proper surrogate for PM_{2.5}.⁹⁵ Therefore, in the absence of the required showing in this case, Protestants allege that the PM₁₀ surrogacy policy cannot be relied upon to demonstrate compliance with PM_{2.5} air quality standards.

LBEC disagrees that the Trimble Order applies to this case. LBEC notes that the EPA has previously indicated that the TCEQ's authority to grant air permits is not subject to changing federal interpretations and guidance.⁹⁶ Because the Commission has consistently upheld and applied the surrogacy policy to air permit applications—even as recently as December 11, 2009, after the Trimble Order—LBEC contends that the Trimble Order has not altered the Commission's implementation of the surrogacy policy. Rather, by issuing an order applying the surrogacy policy four months after the EPA Administrator's order, LBEC contends the TCEQ was affirming its intent to continue to rely upon the surrogacy policy without making the showings required by the Trimble Order.

The ED also disputes that the Trimble Order has any relevance to this case. The ED notes that the technical review of the application was completed approximately eight months prior to the Trimble Order, and that the contested case hearing process was well along at the time the Trimble Order was issued. As such, the ED asserts it would be improper to apply the review and evidentiary standard from the Trimble Order at such a late stage in the process. Rather, the ED contends that the clear precedent prior to the Trimble order shows that the surrogacy policy may be applied without further analysis.

The ED points out that, in 1997, EPA issued a memorandum providing for PM₁₀ to be used as a surrogate for PM_{2.5}. EPA reaffirmed that conclusion in 2008, and continued to recognize the issue and the difficulties of implementing PM_{2.5} standards in its Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards. In 2008, EPA confirmed that those sources that had submitted applications based on the PM₁₀ surrogate policy would be

⁹⁵ See Sierra Club's *Reply to Closing Arguments* at 18; see also EDF Exs. 318 and 319.

⁹⁶ 57 Fed. Reg. at 28,095.

“grandfathered” and would remain subject to the surrogate policy for permitting purposes, and EPA added 40 C.F.R. § 52.21(i)(1)(xi) to reflect the grandfathering provision. Further, EPA has indicated that, for SIP-approved programs, it will allow states to “continue to implement a PM₁₀ program as a surrogate to meet the PSD program requirements pursuant to the 1997 guidance.” Accordingly, in light of this authority, the ED contends that it was proper for LBEC to use compliance with the PM₁₀ standards as the surrogate for compliance with the PM_{2.5} standards.

After considering the arguments and evidence, the ALJs are not convinced that the Commission, in issuing its NRG order in December 2009, specifically rejected the EPA Administrator’s determinations in the Trimble Order. However, it is also clear that Commission precedent establishes that using PM₁₀ as a surrogate for PM_{2.5} has been the accepted practice in air permitting cases when evaluating emissions and emissions limits under applicable state and federal standards. The Commission has reaffirmed the practice numerous times—in cases involving electric generation units and other types of air permitting cases.⁹⁷ Further, it is clear that this practice was sanctioned by the EPA up until very recently. And, as LBEC and the ED note, states like Texas have until 2011 to develop implementation standards for regulating PM_{2.5} emissions.

In the interim, it appears that the EPA, in the Trimble Order, would purport to put additional requirements on a regulatory body attempting to use PM₁₀ as a surrogate for PM_{2.5}. However, the Trimble Order is merely an objection by EPA to a permit. Unless the Commission has otherwise agreed to bind itself by such requirements, the ALJs find no basis for concluding that the Commission *must* apply the additional requirements from the Trimble Order. At no point to date has the Commission indicated that it intends to apply the surrogacy policy with the requirements identified by the EPA Administrator in the Trimble Order. In the absence of a prior court order requiring the analysis outlined in the Trimble Order, or a determination by the

⁹⁷ See *Oak Grove* Final Order, TCEQ Docket No. 2006-0195-AIR (June 20, 2007); *Sandy Creek* Final Order, TCEQ Docket No. 2005-0781-AIR (May 25, 2006); and *NRG* Final Order, TCEQ Docket Nos. 2007-1820-AIR and 2008-1210-AIR.

Commission that it intends to apply such requirements, the ALJs do not find that LBEC's application is deficient for failing to make the enhanced showing outlined in the Trimble Order. Simply put, the EPA's position—as outlined in the Trimble Order—is not binding upon the Commission at this time.⁹⁸

The Commission may choose to consider the Trimble Order and alter its position on the application of the surrogacy policy. If so, it would be proper for the Commission to require a demonstration of the requirements set out in the Trimble Order for applying a PM₁₀ surrogacy policy in this case. But, the ALJs do not make such a recommendation at this point in time. Rather, it is a matter for the Commission's discretion. Unless otherwise decided by the Commission, the use of PM₁₀ as a surrogate for PM_{2.5} by LBEC was acceptable and the failure of LBEC or the ED to make the showing outlined in the Trimble Order is not a basis for denying or remanding the requested permit at this time.

D. Air Dispersion Modeling

Under Texas statutes and rules (and federal requirements adopted by the TCEQ), LBEC is required to demonstrate that its emissions will not contravene the intent of the Texas Clean Air Act, including the protection of public health, public welfare, and physical property. To satisfy these requirements, Joe Kupper, engineer, conducted air dispersion modeling which indicated the PSD significant impact levels (SILs) would be exceeded for NO₂, PM₁₀ (24-hr and annual), and SO₂ (3-hr, 24-hr, and annual).⁹⁹ In accordance with applicable regulations, Mr. Kupper then performed a NAAQS analysis and added in the background concentrations of these pollutants to determine compliance. In addition, an ozone impact analysis was performed for VOCs and NOx, because their emissions were expected to be over 100 tpy. Mr. Kupper and LBEC

⁹⁸ However, it is quite possible that EPA may object to or otherwise challenge a Commission Order not applying the Trimble requirements.

⁹⁹ LBEC Ex. 7, at 17.

maintain that the modeling demonstrates that the project will be in compliance with the NAAQS, PSD increments, the TCEQ Rules and the TCEQ health effects guidelines.

Protestants disagree, pointing to numerous alleged errors and misinterpretations of the applicable modeling guidelines. The ED contends it has not had an opportunity to audit the modeling that LBEC offered on rebuttal as a means to correct modeling mistakes that came to light during the hearing and, thus, suggests this portion of the Application should be remanded. The ALJs agree with Protestants regarding concerns over the first six allegations—with the first two allegations being of such concern that the Application must be denied or remanded for further consideration. The recommendation for a remand or denial is not made lightly, but is made considering the combined weight of concerns regarding material handling at secondary sources, the lack of planning or consideration of material handling onsite, the improper adjustment to the moisture content of the materials handled by POCCA, and the several mistakes in locating nearby facilities for modeling purposes.

Protestants allegations, the parties' positions, and the ALJs recommendations on the alleged errors are set out below.¹⁰⁰

1. ***LBEC repeatedly failed to properly locate emissions sources in conducting its air dispersion modeling, under-predicting emissions impacts by locating sources farther away from the proposed Facility than they really are.***

Protestants urge that it was “painfully obvious” during the hearing that LBEC’s modeling was “shoddy and full of errors.”¹⁰¹ They emphasize that the repeated but unspecific claims of conservatism made by LBEC cannot make up for the detailed shortcomings in modeling included in the record. These shortcomings include incorrectly locating the material handling operations for several facilities when conducting the modeling. The mistakes admitted by

¹⁰⁰ Some issues were raised by Protestants in regard to the modeling, but are addressed separately in the PFD in other sections (for example, some materials handling concerns and the TCEQ’s surrogacy policy for PM_{2.5}). Therefore, these issues are not discussed in this modeling section.

¹⁰¹ EDF’s *Closing Brief*, at 32.

Mr. Kupper include the locations of Koch Carbon (permit 9892A), Citgo (permit 2523C), and Valero (23523) facilities.

Pointing to emissions from Citgo's operations in particular, Protestants observe that the PM₁₀ emissions from this facility were modeled 2-3 kilometers west of where they should have been, moving them further away from the receptors near the LBEC site and artificially lowering the predicted impacts. The Citgo facility was located so far west that the modeled coordinates were not even found on the non-industrial receptor map in the Application,¹⁰² and the Valero source was located in the Corpus Christi ship channel.¹⁰³ Protestants suggest that modeling should be performed with more care, noting that LBEC's own modeling showed a "high second high" maximum ground level concentration of PM₁₀ of 29.7 µg/m³, precariously close to the 30.0 µg/m³ standard.

Protestants note that, on rebuttal, Mr. Kupper presented new modeling for PM₁₀, correcting his mistakes and further refining the modeling to address a newly encountered, predicted exceedance of the standard. He moved the Citgo source approximately 2 kilometers to the west, closer to the LBEC source, and then revised the Citgo emission rate based on the current allowables in that permit. Even with this revision to the emission rate, Protestants observe that the model still predicted an exceedance, a "high second high" of 32.6 µg/m³.

According to Protestants, this forced Mr. Kupper to resort to his "days" analysis, where he then excluded the "high second high" because LBEC was not predicted to be a significant contributor on the day this exceedance was predicted. But still, Protestants maintain the modeling showed a GLC_{max} of 29.0 µg/m³—which is far too close to the standard given the reckless manner in which this modeling was performed. Most importantly, Protestants note that other concerns with the modeling were not addressed, such as the lowering of the moisture

¹⁰² Tr. at 430-441.

¹⁰³ Tr. at 2168.

content of the permit allowables set under the POCCA docks permits.¹⁰⁴ Also on cross-examination, Mr. Kupper admitted that he only adjusted one emission point for the Valero permit, leaving three other emission points misplaced and not located on what he believed to be the Valero property.¹⁰⁵ Protestants end by quoting Mr. Kupper's testimony late in the hearing as evidence that the modeling is insufficient and the Application should be denied:

Q: So as of right now, on the ninth day of this hearing, you cannot say with certainty that any of the modeling that you have testified about in connection with this proceeding is 100 percent accurate. True statement?

A: Yes.¹⁰⁶

Understandably, LBEC views Mr. Kupper's modeling in a very different light. While sources were located incorrectly, LBEC argues they were minor discrepancies. Moreover, LBEC notes that one of these errant locations, the Citgo source, was found to have emissions reductions resulting from a more recent permit action. Accordingly, LBEC refined the modeling downward in its latest modeling run.

LBEC also asserts that because its modeling was conservative, these discrepancies do not have an impact on the final indications and conclusion: emissions from the LBEC source will not cause or contribute to any violation of the applicable standards. Mr. Kupper explained the modeling was conservative because it assumes that the worst-case dispersion conditions occur simultaneously with the worst-case emissions; because conservative emissions rates were used; and because all sources at the LBEC source were assumed to be operating at the same time when this is not always the case.¹⁰⁷ For these reasons, Mr. Kupper opined that the actual

¹⁰⁴ This issue is addressed separately below.

¹⁰⁵ Tr. at 2275.

¹⁰⁶ Tr. at 2331.

¹⁰⁷ LBEC Ex. 100, at 27.

concentrations in the ambient air would be less than the levels modeled and no exceedance of standards would occur.¹⁰⁸

Responding to the ED's request for a remand on this issue, LBEC argues that a remand is not necessary, because even if the modeling offered on rebuttal is not considered, LBEC has met its burden of proof with its initial modeling demonstration. In support of this position, LBEC cites to the testimony of ED witness, Daniel Jamieson, who stated that, even with the shortcomings, he found Mr. Kupper's modeling to be an acceptable demonstration.¹⁰⁹ The determinant point for LBEC is that its sources of PM were not significant at "critical time periods and receptors" with the maximum critical PM₁₀ concentrations of 29.0 µg/m³, below the 30.0 µg/m³ standard.¹¹⁰

As noted, the ED requests that this matter be remanded for further technical review. The ED concurs with Mr. Kupper's opinion that the predicted exceedance of 32.6 µg/m³ is not problematic if it occurred on a day when emissions from the LBEC would not be significant. However, federal guidance allows the permitting agency to approve the demonstration only after the agency has verified the modeling.¹¹¹ Because this modeling was performed during the hearing and offered during LBEC's rebuttal case, the ED had no opportunity to verify it, so this matter should be remanded.

¹⁰⁸ LBEC Ex. 100, at 27.

¹⁰⁹ Tr. at 2098.

¹¹⁰ See the 1990 New Source Review Workshop Manual at Ex. ED-4 at 284. "When a violation of any NAAQS or increment is predicted at one or more receptors in the impact area, the applicant can determine whether the net emissions increase from the proposed source will result in a significant ambient impact at the point (receptor) of each predicted violation, and at the time the violation is predicted to occur. The source will not be considered to cause or contribute to the violation of its own impact is not significant at any violation receptor at the time of each predicted violation. In such a case the permitting agency, upon verification of the demonstration, may approve the permit"

¹¹¹ See the 1990 New Source Review Workshop Manual at Ex. ED-4 at 284. Where if the predicted exceedance occurred on a day when emissions from the LBEC would not be significant, ". . . the permitting agency, upon verification of the demonstration, may approve the permit" Emphasis added. Applicant also argued that the actual maximum critical concentration may be lower than this, but that its modeler stopped the refinement once compliance was observed.

The ALJs recommend the Application be remanded, based on the ED's assertion that PSD permits require all modeling be reviewed by the permitting authority and the ED's modelers did not have that opportunity. The ALJs disagree with LBEC's assertion that it has carried its burden of proof without the rebuttal modeling. The ALJs lack confidence in the modeling initially offered by LBEC. As noted by the ED, "[D]uring cross-examination, EDF demonstrated that at least 2 of (the) emissions source locations submitted as part of the applicant's modeling were not located in the correct position, calling into question the accuracy of the modeling performed."¹¹² At least one of these mistakes, the Citgo site placement, appears substantial and is likely to impact the predicted impacts near the proposed LBEC facility.

Ironically, the rebuttal modeling supports a determination that the Citgo mistake was significant. While understanding that this modeling was not reviewed and approved by the ED, Mr. Kupper's rebuttal modeling suggested that his original modeling mistakes were not minor discrepancies, because that an exceedance was shown. Evidently, it was so significant that the Citgo site throughput needed to be refined with new data in order to lower the impacts. In this discussion, the ALJs are not considering the rebuttal modeling for the truth of the matters asserted, if the ALJs may use the rules of evidence as an analogy. Rather, in light of Applicant's statement that the rebuttal modeling may be eliminated without harm to its case, the ALJs see the rebuttal modeling as incidentally proving the original modeling contained significant mistakes. Accordingly, if the results of the rebuttal modeling are eliminated as suggested by LBEC, the evidence suggests LBEC has not met its burden of proof.

The ALJs find the ED's request that it be allowed to review the LBEC's modeling before this application is approved a valid one. Given the surprising extent of mistakes in LBEC's initial modeling and the potential for PM exceedances in the area of the proposed source, the ALJs recommend the ED and other parties be given an opportunity to fully review this latest modeling and the backup data before any action is taken on the Application.

¹¹² Executive Director's Closing Argument at 5, footnote 15.

Perhaps it should be noted that if this were the sole concern with this application, the ALJs might take some procedural action, such as re-opening the record, to allow the ED and other parties to review the modeling and give testimony. But, this is just one of many “chinks in the armor” of LBEC’s ambient impacts analysis.

2. ***LBEC failed to calculate emissions rates and model PM₁₀ emissions associated with the conveyor system depicted on Figure 3-2.***
3. ***LBEC failed to model emissions from rock crushing operations required to crush the limestone and/or pet coke prior to feeding into the boilers. Rock crushing is a source of PM₁₀ emissions.***

In the Application, a conveyor is depicted running from the once-proposed LBTC site to the material transfer tower at the LBEC site. Mr. DiSorbo and Mr. Kupper testified that potential emissions from conveyors were neither quantified nor modeled,¹¹³ but Mr. DiSorbo also stated that he is aware of a fully enclosed tube conveyor that is designed to eliminate these emissions.¹¹⁴ The conveyor depicted in the Application is no longer applicable, because as previously noted, LBEC now intends to rely on the POCCA for delivery and supply of petroleum coke, limestone, and the other necessary materials.

Protestants contend that failing to include emissions calculations for conveyors and crushers is another example of how LBEC failed to meet its burden of proof. Other applications, such as that submitted by White Stallion, included emission factors for similar operations. Testifying about proposed operations where emission factors were provided in White Stallion, but not in the LBEC Application, Mr. DiSorbo admitted that LBEC did not quantify any emissions from many sources, including conveyors, storage piles, drop points, and crushers.¹¹⁵ Protestants object to the lack of any showing by LBEC on how it will deal with the emissions from the transportation, storage, crushing, and conveying of over 7.2 million tons per year of pet

¹¹³ Tr. at 112 and 460.

¹¹⁴ Tr. at 252.

¹¹⁵ Tr. at 112-113.

coke, limestone, and other bulk materials. Without such a showing, Protestants urge that LBEC has not proven it will comply with the PM₁₀ NAAQS or PSD increment standards.

As discussed above, the ALJs do not believe LBEC must calculate emissions from the conveyor system in the Application, because it no longer intends to use that conveyor or the LBTC for material handling. However, also as discussed above, LBEC failed to prove that POCCA could handle the full extent of the materials needed to operate the LBEC source and failed to otherwise show that those emission points would not cause an exceedance of the Increment. For this reason, the ALJs find that LBEC has failed to meet its burden of proof.

Further, LBEC seems to suggest that any conveyor emissions may not fall within the regulatory scheme as secondary emissions because they are not specific, well-defined, and quantifiable. While this raises an interesting point, the ALJs caution that it is not their understanding that an applicant may avoid secondary emissions simply by failing to quantify or specify emissions that may readably be defined. So while LBEC may abandon its material handling plans in the Application, it may not then simply evade consideration of its necessary and obvious secondary sources and declare its emissions inventory complete. Rather, other plans that may be quantified, specified, and defined should be detailed and reviewed. For instance, LBEC should now include details of how the tubed conveyor, alluded to by Mr. DiSorbo, would deliver materials to the material transfer tower without any emissions. Put another way, as the ALJs understand the regulatory requirements, even when control technologies are expected to eliminate emissions altogether, an applicant is not relieved from demonstrating how this may be achieved. Rather, an applicant must provide some indication of how materials will arrive at its facility (*i.e.*, by conveyor, truck, or other means) and how it intends to account for or control related emissions from such transportation. In this case, LBEC has not done this—having provided no definitive plans for its materials transportation or any associated crushers.

4. ***LBEC failed to calculate emissions rates and model PM₁₀ emissions impacts related to fugitive emissions from the loading of fly ash and bottom ash into trucks---emissions which the Applicant's consultants accounted for in preparing and filing the White Stallion air quality permit application for four petroleum coke-fired circulating fluidized bed boilers and which proposes to use almost identical air quality control measures.***

Similarly to several issues discussed above, LBEC insists that no emissions for the load-out from the fly ash silos are authorized, so none will exist. Protestants again point out that Mr. DiSorbo is responsible for the air quality analysis on both projects and that he accounted for emissions from the loading of fly ash into trucks to be removed from White Stallion but not from LBEC. He also accounted for bottom ash emission from bottom ash silos in the White Stallion application but not in the LBEC application. Protestants maintain that this is yet another example of where PM emissions at the LBEC site were overlooked.

While this issue was not thoroughly discussed by the parties, it appears to the ALJs that if EPA AP-42 emission factors exist for particular activities, but an applicant determines not to apply those factors, then the basis for applicant's determination should be detailed. Concerns over LBEC's failure to include emissions such as these in the Application are heightened when the same air quality experts include these emissions in a very similar application, particularly one pending at the same time. While understanding that not every emissions trail may be detailed, the ALJs recommend that this issue be further addressed before the Application could be granted. Namely, LBEC must describe how it plans to eliminate these emissions (*e.g.* moisture control or perhaps enclosed or underground facilities) with demonstrations of how those controls have been successfully applied. However, the ALJs acknowledge that the evidence does not necessarily demonstrate that this is a significant shortcoming—but it is a shortcoming nonetheless. In light of the other issues that must be further explored, this issue should also be addressed further before the Application could be granted.

5. ***LBEC failed to model the permit allowable and instead increased the moisture content of the petroleum coke handled at the Port of Corpus Christi under POC 9498 in direct violation of EPA and TCEQ modeling guidance, including TCEQ's RG-25. As a result, the modeled emissions are vastly less than the permitted allowables and are in fact less than one quarter of the quantity of emissions authorized under the permit.***

During its modeling of nearby sources, LBEC adjusted the moisture content of the pet coke from 2%, as provided for in the POCCA permit, to 4.8%. Since moisture content and emissions have an inverse relation, the effect of raising the moisture content was to lower the modeled PM emissions from POCCA. Mr. Kupper presented an exhibit showing that the effect of reducing the moisture content of the pet coke was to reduce overall PM₁₀ emissions by a factor of more than four, from 68.0 lb/hr to 14.07 lbs/hr.

The TCEQ's Air Quality Modeling Guidelines specifically address the PSD Increment Analysis with a purpose of demonstrating that emissions of PM₁₀ and other contaminants from a new major source will not cause or contribute to an exceedance of an increment, the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant.¹¹⁶ The guidance is provided in steps to be performed by the modeler. Of relevance to our inquiry is Step 4, where the modeler is instructed to retrieve data from the Commission's point source data base (PSDB):

*For all sources, including grandfathered and exempted sources, use allowable emission rates from the PSDB; these rates are provided in the electronic copy of the retrieval. Do not use the actual emission rates indicated in the paper copy of the retrieval unless they meet EPA criteria. Ensure all of the applicant's sources are included in the modeling inventory.*¹¹⁷

On cross examination, Mr. Kupper testified that Step 5 of the guidance allowed him to adjust down the allowable emission rates to actual emission rates. Step 5, Increment modeling Tier II states:

¹¹⁶ LBEC Ex. 102, at 49.

¹¹⁷ LBEC Ex. 102, at 51. (emphasis added)

Model selected sources with Actual_{MD} emission rates and all other sources at allowable emission rates. The selected sources are usually the applicant's, since actual emission rates may be difficult to obtain for off-property sources. This process assumes that the *difference* in increment for the selected sources is the entire actual emission rate. If the increment is not exceeded, the demonstration is complete.¹¹⁸

Protestants urge that Step 5 allows for adjustment of the allowable emission rates only if *actual* emission rates may be used. In this instance, Mr. Kupper testified that he did not have any actual data to support his determination of actual rate:

Q: Well, do you have actual emission rates for the 9498 (POCCA Dock Permit), or have you just adjusted the permitted allowable emission rate? It is the latter, correct?

A: By adjusting, that's what I'm using as actual. Correct.

Q: Okay. But you didn't measure it?

A: No, I did not.

Q: You didn't have measured data – any kind of data to support that, did you?

A: No.¹¹⁹

Protestants point out that Mr. Kupper eventually admitted that the term “actual” has a specific definition and that his evaluation did not meet that definition.¹²⁰ Mr. Kupper testified that he has no actual moisture content analysis of the pet coke processed at the POCCA, so Protestants urge he has no actual data to support his adjustments. Instead, Mr. Kupper based his

¹¹⁸ LBEC Ex. 102, at 51. (emphasis in original)

¹¹⁹ Tr. at 646.

¹²⁰ Tr. at 647. The guidance provides the following definition: “Actual_{MD} is defined as the most recent, representative two-year average for long-term rates, or the maximum short-term rate in the same two-year period immediately before the modeling demonstration. If little or no operation data are available, as in the case of permitted sources not yet in operation at the time of the increment analysis, the permit allowable emission rate must be used.” See LBEC Ex. 102 at 50.

calculations on POCCA’s representations that it would no longer handle “dry materials.” However, Protestants note that “dry materials” is defined in TCEQ guidance documents as materials having a moisture content of 1.5% or lower.¹²¹ Accordingly, the representations made by POCCA do not prevent it from handling materials with a moisture content of 2%, as POCCA calculated in its permit allowable. Protestants observe this is well below the 4.8% moisture assumption that Mr. Kupper used to calculate POCCA’s “actual” emissions.

This is not merely a form over substance strict reading of the rules, according to Protestants. Rather, they assert the emissions from the POCCA permit make up more than 87% of the total allowable fugitive emissions from nearby existing material handling facilities. So, any changes have a substantial potential to greatly impact the environment.¹²² To further demonstrate this point, Mr. Hunt modeled LBEC’s 24-hour PM₁₀ PSD increment and changed only the moisture content, returning it to the permitted levels of 2%. Making this sole change, the modeling shows the 24-hour PM₁₀ increment is greatly exceeded for every year LBEC modeled.¹²³

Year of Met Data	LBEC Modeling (4.8% moisture)	Hunt’s Modeling (2% moisture)	PSD Allowable Increment Level
1985	25.3 µg/m ³	51.5 µg/m ³	30 µg/m ³
1986	29.7	63.1	
1988	29.6	55.1	
1990	28.5	57.5	
1991	28.8	56.9	

¹²¹ EDF Ex. 107, TCEQ Guidance Document RG-058 at 13, note a.

¹²² This was determined by removing Mr. Kupper’s adjustment and comparing the PM₁₀ emission rate to the total allowable fugitive emissions from nearby existing material handling facilities. See EDF’s *Closing Brief*, at 29.

¹²³ EDF Ex. 119.

Because Mr. Kupper ignored the plain language of the Commission's guidance when he performed LBEC's modeling and because the correct application of the guidance shows repeated exceedances, Protestants assert the Application must be denied.

LBEC responds that, even with the moisture content adjustment made by Mr. Kupper, the modeling is conservative and over-estimates predicted impacts. In support of its position, LBEC cites to correspondence from the POCCA to the Commission stating that it will no longer handle dusty materials such as cement, clinker, sand, and alumina.¹²⁴ For this reason, two series of dry cyclone and wet scrubber trains were removed. The POCCA further stated that it would only handle materials such as coal (moisture content of 4.8%), green pet coke (moisture content of 8%), iron pellets, chrome, and other materials that have high moisture content, around 5%. LBEC points out that POCCA's permit renewal included a special condition stating, "[T]he facility will no longer be able to handle dry materials such as cement, clinker, clay, sand, and alumina"¹²⁵ Nevertheless, LBEC acknowledges that, when calculating emissions for its permit, POCCA used a 2% moisture content. LBEC believes this was used just in an effort to be extremely conservative, and submits that its moisture content adjustment did nothing more than bring the modeled emissions in line with the emissions actually authorized in the POCCA permit.

Perhaps more importantly, LBEC insists that its modeling was performed in full compliance with federal NSR modeling guidance. LBEC contends that the Commission's guidance explains that it builds on, but does not supplant, EPA's more detailed modeling guidance and therefore any suggestion that LBEC must only follow Commission guidance should be ignored.¹²⁶ The telling portion of the federal guidance document, according to LBEC, is the example provided to explain using actual emissions increases rather than allowable emissions increases. Here the guidance establishes:

¹²⁴ LBEC Ex. 7, at 164.

¹²⁵ LBEC Ex. 7, at 150.

¹²⁶ LBEC Ex. 102, at 23.

It is learned, and the permitting agency verifies, that the increment-consuming boiler at Source A has burned refiner gas rather than residual oil since start-up. Consequently, the actual emissions increase at Source A's boiler, based upon the use of refinery gas during the preceding 2 years is substantially less than the allowable emissions increase assumed from the use of residual oil. Thus, the applicant models the actual emissions increase at Source A and the allowable emission increase for the other modeled sources.¹²⁷

LBEC asserts that its adjustment for POCCA emissions in this case is consistent with this example from the EPA's NSR guidance.

Finally, LBEC disagrees with Protestants' position that the effect of the moisture content adjustment alone was to reduce PM₁₀ emissions from POCCA by a factor of more than four. Instead, LBEC notes that its modeling also took into consideration an adjustment to the particle size, an adjustment that even one of Protestants' own experts, Mr. Hunt, agreed with. Given that its moisture content adjustment followed federal guidance, LBEC insists that it was properly performed.

Having reviewed the evidence, arguments and relevant guidance documents, the ALJs find that LBEC's approach—though reasonable on its face—is not allowed under the plain language of TCEQ and EPA guidance documents. In a nutshell, the problem for LBEC is that “actual” is defined in the Commission's guidance to mean, “the most recent, representative two-year average for long-term rates, or the maximum short-term rate in the same two-year period immediately before the modeling demonstration.”¹²⁸ The guidance further explains that, “*if little or no operation data are available, as in the case of permitted sources not yet in operation at the time of the increment analysis, the permit allowable emission rate must be used.*” The record contains no operation data for the POCCA permits in question. Thus, the ALJs are led to conclude that the permit allowable emission rate must be used. Commission guidance does not

¹²⁷ Sierra Club Ex. 205, at C.70 (1990 NSR Manual)

¹²⁸ See LBEC Ex. 102, at 50.

appear to allow Mr. Kupper to calculate what he *believes* POCCA operation data would be and then to substitute his opinion for the permit allowable.¹²⁹

In order to comply with the guidance documents, LBEC needs to use actual operating data from POCCA or request that POCCA amend its permit allowable to exclude its handling of materials that are less than 4.8% in moisture content. As it stands now, POCCA has no such limit. LBEC accurately points to correspondence from POCCA to the Commission establishing that the types of materials it will handle are those with higher moisture content, although the 4.8% used by LBEC is simply an assumption by Mr Kupper and not the lower limit suggested by POCCA to the Commission. Rather, POCCA represented that its “Bulk Material Dock 2 facility, after the R-9498 permit renewal, will be dedicated to handling coal, petroleum coke, metallurgical coke, iron ore, and other similar ores and high *moisture content products (mc>4.1)*”¹³⁰ Thus, even POCCA’s own representation was for materials with a moisture content of 4.1%, which is lower than the 4.8% used by LBEC. Regardless, POCCA’s representations are not what are binding, but rather POCCA’s permit terms govern.

Ultimately, POCCA chose to use a 2% moisture content in its modeling demonstration, noting that this percentage was conservative. POCCA did not use 4.8% and did not indicate this percentage was conservative, as suggested by LBEC. POCCA did not even use 4.1% as conservative. While both 4.1% and 4.8% *may* be conservative, or even overly-conservative, the record does not contain actual operating data indicating as much. Mr. Kupper’s assumptions and modeling are not based upon either POCCA “permit allowable” emissions, nor by any

¹²⁹ While LBEC may argue this elevates legalism over good practice, it is common in permitting proceedings for parties to disagree that the regulatory guidance represents the best practice. For instance, with the PM₁₀ surrogate policy or PM CEMs, Protestants offer evidence proving that, from a best environmental practice standpoint, engineering is now such that both are feasible and likely better than the alternatives presently allowed by regulatory guidance. However, as LBEC argues in that regard (and in numerous other instances), the regulatory guidance is what must be followed. This present issue is different only in that the roles are now reversed, and it is Protestants who are calling for strict adherence to the guidance documents. The ALJs’ role is to construe and apply clear and unambiguous regulation and policy, whether it benefits an applicant or a protestant. Thus, the ALJs are bound by the guidance documents.

¹³⁰ LBEC Ex. 7, at 160.

representative operating data from POCCA over the past two years. In order to recommend acceptance of Mr. Kupper's modeling, the ALJs would have to recommend that the state and federal guidance be ignored. They will not make such a recommendation.

Turning to LBEC's argument that the federal guidance is more favorable to its position, the ALJs do not find any inconsistency between the federal and state guidance. Setting aside the irony in LBEC's insistence that one should, in this instance, rely on federal guidance rather than Commission guidance, LBEC misses the point of Protestants' contentions.¹³¹ The example found in the federal guidelines and cited by LBEC establishes only that, if a source has burned refiner gas rather than residual oil since start-up, the actual emissions increase at that source's boiler, based upon the use of refinery gas during the preceding 2 years, may be modeled rather than the assumed increase from the use of residual oil found in the permit. But again, this scenario assumes "actual" emission increases and the term "actual" is defined to the exclusion of any modeler's opinion of what the operating data probably are or may be. Protestants' point is that, because there is no operation data available, the permit allowable emission rate must be used. The ALJs find nothing in the federal guidance to disturb this point.

This is a significant issue because emissions from POCCA appear to drive the models when PM increments are considered, and because the moisture reduction has a very significant impact on the modeling results for this contaminant. Over the course of the evidentiary hearing and while reviewing the record, it became clear to the ALJs that LBEC has had difficulties with its PM₁₀ demonstration. While the ALJs do not know, it certainly is possible that if the modeling runs were performed at 4.1% instead of 4.8% moisture content for pet coke, LBEC would be in violation of the PM₁₀ increment. As explained below in the next section, the ED required LBEC to re-model PM₁₀ for the 24-hour increment, adding in the off-property sources where LBEC's screening modeling showed PM₁₀ emissions below the *de minimis* impacts level. If the ED was concerned with *de minimis* impacts and what might occur with LBEC's PM₁₀ increment

¹³¹ This is ironic because, in regard to nearly all other issues, LBEC continually argues that Commission guidance dictates over federal guidance.

demonstration, the ALJs find it even more likely that changes to the authorized POCCA emissions will present a challenge. Accordingly, the ALJs conclude that, in regard to this issue, the modeling must be corrected and redone in accordance with the federal and state guidelines before the Application should be granted.

6. *LBEC arbitrarily reduced by half the emissions rate from the 16 largest baghouses proposed for LBEC, which its own expert admits has the effect of cutting in half the emission from the baghouses.*

On cross examination, Mr. Kupper testified that the PM exhaust concentrations in the larger baghouses proposed for LBEC were reduced by 50% and that the reason for that reduction was to reduce the overall emissions of PM₁₀ for short-term PM₁₀ PSD increment compliance.¹³² The ALJs find no evidence suggesting this was done “arbitrarily,” as argued by Protestants. Rather, the greater weight of evidence suggests the emission rates were guaranteed by a vendor. While LBEC may have needed to make this adjustment in order to come into compliance with the PSD increment, there is no evidence suggesting this new rate of emissions cannot be met. Rather, it is backed by a vendor guarantee and the evidence does not indicate the projected emissions are not attainable. As such, the ALJs recommend a finding that the reduction in emission rate was proper.

7. *LBEC failed to model sources below the significance level when conducting its PSD increment modeling in direct violation of applicable EPA and TCEQ modeling guidance.*

Protestants urge that LBEC violated TCEQ guidance by removing from its PSD modeling impacts off-property sources where its screening modeling showed NO_x, SO₂, and long-term PM₁₀ emissions below each of these pollutant’s individual *de minimis* impacts level.¹³³ While acknowledging that this practice is allowed when an applicant performs NAAQS modeling,

¹³² Tr. at 453. EDF Ex. 317.

¹³³ Tr. at 24.

Protestants urge it is not allowed with PSD modeling, for good reason. Language in the relevant state and federal guidance for modeling NAAQS states:

Model allowable emission rates for all sources that emit regulated pollutant. Off-property sources may be eliminated from the modeling demonstration if screening modeling indicates that the sources' contributions would not equal or exceed the applicable *de minimis* within the AOI. If any sources are omitted from the modeling demonstration, explain in the air quality analysis why they were omitted.¹³⁴

PSD modeling guidance does not have similar language, but instead states that “[T]his retrieval identifies *all increment-affecting sources* within the radius of impact that should be evaluated along with the source in the permit application.”¹³⁵ Protestants explain that the distinction between NAAQS and PSD increment modeling is appropriate because the NAAQS analysis requires that background concentrations be added to the modeled predictions and it is assumed that the background concentrations cover the omitted *de minimis* sources. This is unlike PSD increment modeling where it is impossible to monitor ambient concentrations of a pollutant emitted solely by PSD-increment-consuming sources without including some emissions from non-increment-consuming sources in the monitoring data. In order to account for all the increment-consuming sources then, applicants must include sources whose emission impacts are below *de minimis*.¹³⁶

Protestants urge that Mr. Kupper ignored the relevant guidance documents when he omitted the sources where screen modeling predicted *de minimis* emissions in his initial dispersion modeling. Catching his error, the ED required Mr. Kupper to include these emissions for LBEC's 24-hour short-term PM₁₀ Increment modeling, but did not require the same for SO₂, NO_x, and long-term PM₁₀ PSD increment analyses. Protestants are concerned that this oversight might be significant for the 24-hour SO₂ PSD increment, because the increment consumption

¹³⁴ LBEC Ex. 102, at 25 and 39.

¹³⁵ LBEC Ex. 102, at 51 (emphasis added).

¹³⁶ EDF's *Closing Brief*, at 36. Tr. at 524 and LBEC Ex. 10, at 49-52.

predicted is relatively close.¹³⁷ Protestants urge that LBEC's air quality analysis is therefore incomplete, causing the PSD increment modeling to under-predict emissions impacts for SO₂, NO_x, and long-term PM₁₀.

LBEC responds that, in order for the ALJs to recommend findings in support of Protestants, the ALJs must find that the ED knowingly ignored federal guidance for SO₂, NO_x, and long-term PM₁₀, and that the SO₂ 24-hour increment is threatened by this failure if the Application is granted. To the contrary, LBEC insists that Protestants have not shown that the removal of the insignificant sources made any difference in the final reported outcome, and LBEC asserts its facility will not result in a violation of any PSD increment.

Moreover, LBEC argues that Protestants' "concocted rationale" for different treatment of *de minimis* sources in the relevant guidance documents is unsupported. LBEC urges that "using maximum allowable emission rates for PSD increment analysis is extremely conservative and, consequently, elimination of *de minimis* sources,—i.e., the screening of sources from the inventory, using maximum allowable rates in the process—is specifically sanctioned by federal modeling guidance."¹³⁸

After reviewing the arguments and guidance, the ALJs conclude that federal and state guidance documents indicate *de minimis* sources should be considered in PSD increment analysis. In fact, the ED required Applicant to include *de minimis* sources and to remodel for the PM₁₀ 24-hour increment, so no further consideration is needed for this increment. However, ALJs do not find that *de minimis* sources could reasonably be expected to impact other final determinations made in the PSD Increment Analysis. The predicted increment consumption for SO₂ is only 86% of the increment. Given that there are no other issues of concern regarding SO₂, unlike PM₁₀ where significant other issues exist, the ALJs are satisfied that the SO₂ increment will not be violated.

¹³⁷ LBEC Ex. 21, at 14.

¹³⁸ LBEC's Response to Closing Arguments, at 29.

8. *LBEC failed to use five consecutive years of meteorological data as required by EPA guidance.*

EPA's Guideline on Air Quality Models at Section 8.3.1.2 states:

Five years of representative meteorological data should be used when estimating concentrations with an air quality model. Consecutive years from the most recent, readily available 5-year period are preferred. The meteorological data should be adequately representative, and may be site specific or from a nearby NWS station.¹³⁹

Protestants argue LBEC failed to use five years of consecutive meteorological data and, thus, its data set was deficient. The ALJs disagree. The Commission has already found the use of National Weather Service data supplied by the Commission on its website to be proper.¹⁴⁰ Moreover, the EPA guideline does not strictly require otherwise. Rather, it states that five years of consecutive data is "preferred." The AERMOD-ready data supplied by TCEQ has been quality assured and approved by the TCEQ for use in regulatory applications.¹⁴¹ Thus, the ALJs find that its use by LBEC was proper.

E. BACT Analysis

Under TEX. HEALTH & SAFETY CODE § 382.0518(b)(1), LBEC is required to demonstrate that its proposed facility will use best available control technology. In conducting the BACT analysis, the TCEQ and other regulatory agencies look at the specific technology available and then determine the best results to be achieved. So, the purpose of the BACT analysis is to develop emission limits for various pollutants that are achievable using BACT. Obviously, the technology to be used is significant, because it impacts the expected ability of the facility to achieve the BACT emission limits. But, the BACT analysis is not designed to identify required technologies per se, but rather is designed to identify achievable emissions limits. With this in

¹³⁹ Sierra Club Ex. 200, at 23; 40 C.F.R. Part 51, Appendix W, § 8.3.1.2.

¹⁴⁰ *NRG Final Order* at 9, FOF No. 59; also <http://ftp.tceq.state.tx.us/pub/OPRR/APD/AERMET>.

¹⁴¹ LBEC Ex. 501, at 00011.

mind, the ALJs turn to the Commission's guidance and precedent on conducting the BACT analysis.

1. TCEQ Guidance on BACT

The TCEQ has provided a guidance document entitled "Evaluating Best Available Control Technology (BACT) in Air Permit Applications," which sets forth the guidance for evaluation of BACT proposals submitted in a NSR air permit application. The guidance document notes that the TCEQ BACT evaluation is conducted using a "tiered" analysis approach, involving three different tiers.¹⁴²

A **Tier I** evaluation involves a comparison of the applicant's BACT proposal to emission reduction performance levels accepted as BACT in recent permit reviews involving the same process or industry. However, the guidance document notes that in some cases, "evaluation of new technical developments may also be necessary."¹⁴³ A **Tier II** evaluation involves consideration of controls that have been accepted as BACT in recent permits for similar air emission streams in a different process or industry. A **Tier III** evaluation is a detailed technical and quantitative economic analysis of all emission reduction options available for the process under review. The guidance document notes that "technical practicability is established through demonstrated success of an emission reduction option based on previous use, and/or engineering evaluation of a new technology." The guidance document also notes that the "Tier III evaluation is rarely necessary because technical practicability and economic reasonableness have usually been firmly established by industry practice as identified in the first two tiers."

Essentially, then, the TCEQ's practice is to look first at other permits involving the same process or industry to see what has been determined achievable. Then, adjusting for differences in the specific process used, the fuels to be burned, and any other known variables that might

¹⁴² LBEC Ex. 28, at 6-7.

¹⁴³ LBEC Ex. 28, at 6.

cause justifiable variations in emissions, the previously-accepted emission rates are basically applied to the proposed facility. If new technology exists, the TCEQ will consider that and determine whether it would be feasible and provide for a greater reduction in emission limits.

In contrast, the EPA uses a “top-down” approach for BACT analysis. The EPA analysis requires the following steps: (1) identify all potential control technologies; (2) eliminate technically infeasible options; (3) rank remaining control technologies by control effectiveness; (4) evaluate the most effective controls and document the results; and (5) select the BACT by choosing the best technology not eliminated in step four (based upon concerns regarding collateral energy, environmental, or economic impacts). This approach inherently focuses on the technologies available and requires a full analysis of all available control technologies. The TCEQ approach, on the other hand, does not require that same evaluation, since it focuses first (and primarily) on other permits that have been granted and the BACT limits approved in them.

2. LBEC’s BACT Analysis and Emissions Limits

LBEC generally used the TCEQ’s Tier I methodology for determining BACT, with an additional step for evaluating NOX emissions. The additional step involved looking at selective catalytic reduction (SCR) technology to determine whether it could be used to further reduce NOX emissions. LBEC’s BACT analysis considered two other recently-permitted pet coke-fired CFB boilers like those to be used by LBEC. One permit was issued by TCEQ to Formosa Plastics Corporation Texas (Formosa) in December 2006, and the other was issued to Calhoun County Navigation District (CCND) in August 2007.

LBEC found that its proposed facility will use the same control technologies as those used for the Formosa and CCND facilities, along with some additional control measures. Specifically, LBEC will use limestone injection, selective non-catalytic reduction (SNCR), and fabric filters to control emissions from the CFB boilers. Also, LBEC will use a post-combustion scrubber and activated carbon injection (the latter for mercury control). As a result of the

technologies to be used, LBEC's proposed emission rates are all equal to or lower than the emission rates for the CCND and Formosa facilities—with the exception of hydrogen chloride (HCl).¹⁴⁴ Moreover, LBEC compared the technologies and emission rates it proposes to those for other recently-permitted facilities around the country, as contained in the EPA's RBLC database.

In addition to looking at the permits for these other facilities, LBEC considered information from vendors and engineering experts on the most realistic emissions limits available with BACT and the availability of any new technologies. Based upon its review of the other permits, its knowledge of the technology available, and the specific processes to be used, LBEC concluded that the emission limits shown on the following chart represents BACT for the pollutants in issue:

Proposed BACT Limits

Pollutant/Toxic	Performance Standard	Compliance Averaging or Demonstration Period¹⁴⁵
NOX	0.070 lb/MMBtu	30-day
	0.10 lb/MMBtu	Hourly
SO ₂	0.114 lb/MMBtu ¹⁴⁶	30-day
	0.086 lb/MMBtu	Annual

¹⁴⁴ The difference in proposed HCl emission rates is attributed to the fact that LBEC used a higher chlorine content value as representative for the petroleum coke it would use for fuel. LBEC claims it was conservative by using the higher chlorine content value in its calculations. LBEC Ex. 1, at 68.

¹⁴⁵ Certain standards are demonstrated by continuous emissions monitoring systems (CEMS) while others are demonstrated by reference method (RM) testing. Accordingly, some of the standards reflected on the chart above are actually annual standards, but indicate "3-Hour" because the annual average is met by showing compliance through a 3-hour demonstration period. See Tr. at 1916-1917. The ALJs make no distinction in this chart, as it is only for quick reference and demonstrative purposes. The standards are discussed in more detail below, and in the proposed draft permit and the proposed Findings of Fact and Conclusions of Law.

¹⁴⁶ There was some confusion whether the correct number proposed by LBEC is .144 or .114. The testimony at the hearing supported both numbers. See Tr. Vol. 1, at 81 and 103-105. However, the correct number is supposed to be the same as that proposed in the White Stallion permit application. The evidence in this case, and the evidentiary record on file in the White Stallion case, indicate that correct number is .114. See EDF Ex. 7, at 2.

Pollutant/Toxic	Performance Standard	Compliance Averaging or Demonstration Period ¹⁴⁵
CO	0.11 lb/MMBtu	30-day
Hg	2.0 x 10 ⁻⁶ lb/MMBtu	12-month rolling
PM/PM ₁₀ (filterable)	0.011 lb/MMBtu	3-Hour
Total PM/PM ₁₀	0.033 lb/MMBtu	3-Hour
VOC	0.005 lb/MMBtu	3-Hour
H ₂ SO ₄	0.022 lb/MMBtu	3-Hour
HCl	0.0044 lb/MMBtu	3-Hour
HF	0.00038 lb/MMBtu	3-Hour

These limits are supported as being consistent with BACT by the testimony of numerous experts retained by LBEC, as well as by the ED's technical staff. In addition, LBEC's experts testified that there were no known technical developments (that are both technically practicable and economically reasonable) that offer the potential for further emissions reductions. Therefore, LBEC contends that these limits represent BACT.

3. Evaluation of Specific BACT Limits

Protestants raise numerous challenges to LBEC's proposed BACT limits. For simplicity, the ALJs discuss BACT for each specific pollutant in issue under separate headings below, including the Protestants' arguments, LBEC's response and the ALJs' analysis. However, before turning to the Protestants' arguments, it is important to identify two key factors that must be considered at all times in the BACT analysis: (1) the type of fuel to be used; and (2) the type of boiler to be used. These two considerations will drive the analysis of the available technologies for reducing air pollutants.

Here, LBEC proposes to use pet coke as the principal fuel. Although similar in many respects to coal, it also has some characteristics that are different from coal, natural gas, and

other fuels, and these characteristics are discussed in more detail below in regard to specific pollutants. Second, LBEC is proposing to use a CFB boiler. This type of boiler uses a circulating fluidized bed and is very different from a pulverized coal boiler. These differences in fuel and boiler type must be accounted for when comparing LBEC's proposed facility to other types of permitted facilities, and significantly impact the composition of the air pollutants emitted and the feasibility of certain control technologies. With these differences in mind, the ALJs now address the BACT limits for each of the pollutants in issue.

a. The Proposed BACT NO_x Limits

To control NO_x emissions, LBEC will rely on good combustion practices and its inherently low NO_x CFB boilers. However, it still must use an additional control technology. The control technology it proposes to use is selective non-catalytic reduction (SNCR), whereby ammonia will be injected into the boiler exhaust gas system, thus converting NO_x into inert nitrogen and water. Using this technology, LBEC proposes that the BACT emission limits for NO_x are 0.07 lb/MMBtu (30-day average) and 0.10 lb/MMBtu (hourly limit).

Protestants and OPIC contend that the proposed NO_x limits do not represent BACT because they do not incorporate SCR technology for the control of NO_x. With SCR, a reductant is injected into the exhaust gas, thus causing the nitrogen oxides in the exhaust stream to be broken down and absorbed onto a catalyst rather than emitted into the air. In contrast, the SNCR proposed in this case uses the injection of a reductant into the exhaust stream to break down the nitrogen oxides, but does not use a catalyst to absorb any subsequent nitrogen oxide reductions. Accordingly, SNCR does not necessarily allow for quite as high a level of control as SCR.

Protestants contend that SCR should be required for LBEC's proposed facility. They point out that SCR has been permitted on other coal and pet coke-fired boilers. In particular, the AES Deepwater facility in Texas (a 100% pet coke-fired facility) uses SCR, as do numerous facilities in other jurisdictions. Further, regulators in New Jersey and California have determined

that SCR may be feasible on CFB boilers. Sierra Club expert Phyllis Fox, Ph.D., testified that she believed that SCR could be used to obtain greater NO_x reductions at LBEC. Therefore, she concluded SCR should be required to ensure BACT is achieved for NO_x emissions.

Moreover, Protestants note that the ED's permit engineer reviewing the permit believed that further consideration of SCR technology was warranted. Mr. Hamilton, the ED's permit engineer, testified that he was pursuing a line of inquiry regarding the technical feasibility, availability, and/or applicability of SCR to LBEC's proposed CFB boilers, but he was directed by TCEQ management to stop that inquiry.¹⁴⁷ Thus, he did not fully evaluate the feasibility of applying SCR technology to the CFB boilers in issue here. But, he believed that such an inquiry was at least worth pursuing, given the successful use of SCR technology on other types of boilers.

LBEC contends that it reviewed the possibility of using SCR technology on the facility and concluded that it was not feasible. LBEC acknowledges that SCR technology has been used in other facilities burning pet coke, but those facilities use a PC boiler, rather than a CFB boiler. Similarly, SCR has been used in CFB boilers, but not those that burn pet coke. According to LBEC's experts, the use of SCR with pet coke as a fuel in CFB boilers presents unique concerns of "catalyst plugging" that do not exist to the same degree with PC boilers burning pet coke, or CFB boilers that are burning a fuel other than pet coke. They assert that SCR would likely cause CFB boilers burning pet coke to have much higher maintenance demands and greater periods of downtime due to frequent catalyst plugging. As such, LBEC asserts that it is not presently feasible to have SCR on its proposed CFB boiler.

In support of these concerns, LBEC's experts identified three primary reasons why catalyst plugging was likely to be of great concern if SCR is used with LBEC's CFB boilers:

¹⁴⁷ Tr. at 1909-1911.

- CFB boilers burning pet coke will have high ash loading (*i.e.*, higher ash density);
- The average size of ash particles will be much larger than a PC boiler would produce; for a PC boiler, the fly ash would typically be 7 to 9 microns in size, whereas with a CFB boiler, most ash particles are about 25 microns, but can often be 40 or 50 microns or greater;¹⁴⁸
- There will be high unreacted alkali (calcium, specifically) that can influence the ash particle properties and make them very sticky and difficult to move and keep clean.

Each of the concerns listed above presents a significant risk of plugging of the pores of the catalyst, leading to catalyst plugging or deactivation. As J. Edward Cichanowicz, Ph.D., testified, the presence of high alkaline ash is believed to be the generally accepted major cause of catalyst deactivation.¹⁴⁹ LBEC further supported its contentions with a letter from Foster Wheeler, the vendor who will supply its CFB boilers. In the letter, Foster Wheeler vice president James J. Utt stated:

Today, boiler suppliers including Foster Wheeler do not provide SCR systems on CFB boilers burning coal or petroleum coke due to the high risk of catalyst fouling and catalyst poisoning. Unlike PC boiler technologies, which typically use SCR systems to reduce NO_x, CFBs have much higher concentrations (about 2 to 5 times higher) of calcium rich solids in the flue gas coming from CFB bed material carry-over. Since SCR systems rely on the flue gas to pass through the tight spacing within a catalyst monolith, a high risk of catalyst fouling therefore exists. Further, the ash in a CFB firing pet coke/coal contains large amounts of calcium which is known to cause significant irreversible degradation of the catalyst. For these reasons catalyst suppliers are not willing to offer acceptable life guarantee's for the catalyst.¹⁵⁰

Based upon this evidence, LBEC contends that SCR is simply not viable for its proposed pet coke-fired CFB boilers.

¹⁴⁸ Tr. at 958-959; LBEC Ex. 400, at 19.

¹⁴⁹ Tr. at 961.

¹⁵⁰ LBEC Ex. 14, at 35-36.

The ED supports LBEC's position, concluding that SCR is not a viable technology for LBEC's proposed project. The ED disagrees that its permit engineer, Randy Hamilton, did not review SCR technology. Rather, the ED contends that he did review it, found it to be technically infeasible, and thus found that it was not required as BACT for the LBEC facility.¹⁵¹ The ED supports the arguments presented by LBEC for concluding that SCR technology has not been shown to be BACT for pet coke-fired CFBs, and notes that SCR has not been used on any pet coke-fired CFB boilers in the United States.

In response to the concerns regarding catalyst plugging, Protestants assert that those concerns can be engineered away—through, for example, a reformulation of the catalyst, modification of the cyclones, or the addition of some sort of particulate removal device. Alternately, they argue that SCR can be used on the “cold side” (*i.e.*, after the scrubber), at which time the larger particles have been removed, nullifying concerns about catalyst plugging.

In the ALJs' opinion, this issue is best summed up by a phrase in Sierra Club's closing brief. Specifically, Sierra Club states in closing arguments that “[r]easonable experts differ on whether SCR can be applied to CFBs.”¹⁵² The ALJs agree that this appears to be true. However, as it is right now, even if reasonable experts disagree on whether SCR *could* be successfully applied on pet coke-fired CFB boilers, the evidence is clear that it is *not* being applied currently to any pet coke-fired CFBs. The record contains no evidence of even a single pet coke-fired CFB boiler that has been shown to successfully use SCR technology in place of SNCR technology.

Moreover, each of the arguments raised by Protestants have little or no merit when examined further. First, all of the facilities cited by Protestants as proof that SCR can be used successfully are easily distinguishable—either because they use pulverized coal boilers or because they use a different fuel source. In each case, the change in boiler type or fuel renders

¹⁵¹ To support this contention, the ED cites to ED Ex. 1, at 14-15; Tr. 1886, and 1958-1960.

¹⁵² Sierra Club's Closing Brief, at 20.

those facilities irrelevant, in light of the concerns of catalyst failure from the combination of the CFB boiler and the use of pet coke—which indisputably has a much higher and troublesome fly ash content.¹⁵³ While Protestants argue that the concerns raised by LBEC can be engineered away, this assertion is merely theoretical. There is no demonstrated evidence of any facilities that have “engineered away” these concerns in the manner suggested by Protestants and are using SCR technology successfully with a pet coke-fired CFB boiler. LBEC is not required to try to develop unproven engineering solutions to a known issue with a specific control device.

Similarly, it makes little or no sense to apply SCR to LBEC on the cold side, *i.e.*, post-scrubber. At that point, the gas has to be reheated to an effective SCR reaction range, thus requiring additional energy and creating the potential for some additional emissions from the reheating process. As James E. Staudt, Ph.D., testified, “no one would ever consider [cold-side SCR] for a new coal or pet coke-fired power plant because . . . the energy penalty would be pretty severe.”¹⁵⁴ LBEC’s engineer and CFB boiler expert, R.W. Beck, similarly opined that a cold-side SCR is a significantly more expensive option, requires much more equipment for reheating the flue gas, and results in a decrease in plant efficiency because more fuel is burned to produce the same electrical output, thus increasing plant emissions. R.W. Beck further indicated that it “is not aware of any application where a cold side/low dust SCR has been used on a CFB unit in the United States.”¹⁵⁵

As such, the ALJs are not persuaded that SCR actually represents BACT for a pet coke-fired CFB. Instead, the ALJs conclude that SNCR technology currently represents BACT. Even the other regulatory bodies that Protestants cite as supporting the feasibility of SCR technology

¹⁵³ Even the coal-fired CFB boilers cited by Dr. Fox as using SCR are not persuasive. Of six cited outside the U.S., two had NOx removal efficiencies of only 33%, and two of the other units were installed on pressurized CFBs—which Dr. Fox conceded must have low particulate matter. Tr. at 1676-1678, 1682, 1684, and 2225. Dr. Staudt pointed out that pressurized CFBs are significantly different from non-pressurized CFBs. Tr. at 2224-2225.

¹⁵⁴ Tr. at 2226.

¹⁵⁵ LBEC Ex. 10, at 8.

on CFB boilers have not required such. Rather, they have simply expressed initial conclusions that SCR could be feasible. This is very different from actually conducting a full analysis and concluding that SCR was required in order to have BACT. Therefore, based on the record before them, the ALJs conclude that SCR technology should not currently be required as BACT for LBEC's pet coke-fired CFB boilers.¹⁵⁶

b. The Proposed BACT SO₂ Limits

In regard to SO₂ emissions, the proposed permit initially contained a short term BACT limit for SO₂ of 0.2319 lb/MMBtu and a long-term BACT limit of 0.1942 lb/MMBtu. The ED lowered these limits to 0.178 lb/MMBtu and 0.15 lb/MMBtu, respectively, in the draft permit. These limits were still higher than those proposed for the White Stallion facility, whose application is currently the subject of a contested case hearing at SOAH. At the hearing, LBEC expert Shannon DiSorbo testified that he recommended that the SO₂ limits in this case be lowered to match the White Stallion proposed limits—namely 0.114 lb/MMBtu for the 30-day limit and 0.086 lb/MMBtu for the annual limit. Accordingly, those are the current limits proposed by LBEC. These limits will be achieved through the use of sorbent injection directly into the fluidized bed of the boilers and polishing scrubbers. Through limestone injection and polishing scrubbers, LBEC anticipates achieving an SO₂ removal efficiency of greater than 99%, and the currently-proposed limits reflect this.

Protestants assert that the SO₂ limits could be lowered even further. EDF notes that LBEC's proposed BACT limits are based upon an assumed pet coke sulfur content of 6.7% on average, with an 8% maximum. EDF argues that these are unrealistically high assumptions, and that LBEC's own documents show that the expected sulfur content of the pet coke will likely be

¹⁵⁶ However, this conclusion should not preclude a full evaluation by the ED's technical staff of the feasibility of SCR during the MACT analysis. Technology in this area can be rapidly changing, and the fact that no technology showing SCR feasible for a pet coke-fired boiler existed under a BACT analysis at the time of the hearing in this matter should not preclude the issue from being revisited and properly analyzed by the ED's technical staff during the MACT analysis (a full analysis was not done by the ED's staff during the BACT review).

much lower. Therefore, using a lower sulfur content for the pet coke, and keeping the 99% control efficiency, EDF proposes that both annual and short term BACT limits for SO₂ should be no higher than 0.058 lb/MMBtu.

Sierra Club also contends that SO₂ limits should be lower. Sierra Club cites to two other permitted facilities with much lower SO₂ emissions limits: (1) the AES Puerto Rico facility; and (2) the Nevco Sevier facility in Utah. Both of those facilities have permitted SO₂ limits of 0.022 lb/MMBtu, one based on a 24-hour average and the other based on a 30-day average. Both of those facilities are coal-fired, but Sierra Club contends they are appropriately considered, because LBEC anticipates firing up to 100% low sulfur fuel. Further, Sierra Club notes that stack tests on the JEA Northside power plant in 2002 showed SO₂ emissions ranging between 0.03 and 0.13 lb/MMBtu. This allegedly shows that much lower SO₂ emissions limits are achievable and should be required for BACT purposes.

Moreover, Sierra Club argues that wet flue gas de-sulfurization (wet FGD) should be used by LBEC to control emissions of SO₂, along with HCl and HF. According to Sierra Club, wet FGD is technically practicable, economically feasible, and has been shown to achieve greater control efficiencies than LBEC's proposed polishing scrubber. Sierra Club cites numerous other facilities using wet FGD that have achieved SO₂ control efficiencies of between 99.5 and 99.9% over the last 20 years, and points to one vendor that guarantees 99.8% efficiency for its High Efficiency Contact Flow Scrubber (a type of wet FGD).¹⁵⁷

Given the existence of lower permit limits for other facilities, and the availability of additional technology to further reduce SO₂ emissions, Sierra Club supports EDF's request that SO₂ limits be set no higher than 0.058 lb/MMBtu, for both annual and short term.

¹⁵⁷ EDF Ex. 1, at 25; EDF Ex. 11.

LBEC dismisses Protestants' arguments as being unrealistic and based upon incorrect information. First, LBEC disagrees that the AES Puerto Rico facility or the Nevco Sevier facility in Utah are properly considered. Both of those facilities use coal which is lower in sulfur content than the pet coke proposed as fuel by LBEC. And, Sierra Club is mistaken that LBEC will rely on any low sulfur fuels. In fact, LBEC points out that its application specifically states that "because LBEC is not viable without petroleum coke as the fuel, use of low sulfur fuels has been rejected."¹⁵⁸ Therefore, the two facilities cited by Sierra Club are allegedly irrelevant for purposes of evaluating this application.

Similarly, LBEC dismisses EDF's criticisms of the projected sulfur content of its pet coke. LBEC points to the evidence showing that its projected sulfur content for pet coke is squarely within the range of assumed sulfur content for other recent pet coke-fired facilities that have been permitted. Specifically, LBEC cites to seven other pet coke-fired CFB projects that have been permitted in roughly the last decade or have permits currently pending. Of those seven, six used the exact same maximum sulfur content for pet coke (8%) that LBEC used.¹⁵⁹ Similarly, of those seven, three used the same average sulfur content (6.7%) that LBEC used.¹⁶⁰ One used a higher average (8%), and another used a lower average (6%).¹⁶¹ The other three did not provide data. Accordingly, LBEC asserts that its assumed sulfur content is squarely in line with the sulfur content that other applicants have expected for pet coke.

Turning to the JEA Northside facility, LBEC asserts that BACT limits must be set based upon what is achievable over the long term, not just the best results that can be achieved in any short-term period. Because there is no evidence the JEA Northside facility has consistently met short-term limits as low as 0.114 lb/MMBtu on an ongoing basis, LBEC argues its stack tests are of little relevance.

¹⁵⁸ LBEC Ex. 6, at 43.

¹⁵⁹ LBEC Ex. 4, at 7.

¹⁶⁰ LBEC Ex. 4, at 7.

¹⁶¹ LBEC Ex. 4, at 7.

Moreover, LBEC alleges that the 2002 stack test results from the JEA Northside facility actually support the proposed limits here. Those test results went as high as 0.13 lb/MMBtu. This is greater than both the short-term and annual limits proposed in this case. Therefore, even if those stack tests are a reliable predictor of longer-term sustainable performance standards (a contention that LBEC disputes), the proposed limits in this case are lower than some of the stack test results achieved at JEA Northside. According to LBEC, this shows that LBEC's proposed SO₂ limits represent BACT and should not be lowered.

Further, LBEC disagrees that wet FGD should be considered for its pet coke-fired CFB boilers. LBEC presented evidence that there are no known pet coke-fired CFB boilers that use wet FGD. Even Protestant's expert, Dr. Sahu, was unaware of any. LBEC cites to numerous pet coke-fired CFB boilers that have been permitted in the past five years and none of them have required wet FGD, despite the existence of the technology at the time (because it is a relatively mature technology, having been around for the last 20 years). Given the fact that no regulatory body has seen fit to require wet FGD as a control technology, and the proposed SO₂ limits are as low as any other pet coke-fired CFB boilers that have been permitted, LBEC contends that there is no reason to require wet FGD here.

The ALJs agree with LBEC and conclude that the lowered SO₂ limits of 0.114 lb/MMBtu for the 30-day limit and 0.086 lb/MMBtu for the annual limit do represent BACT. Although the evidence (*i.e.*, some stack testing) shows that lower emissions of SO₂ have been obtained over short periods of time, the evidence does not establish that they have been achievable continuously over extended periods of time. There will be fluctuation in emissions and it is not appropriate to set the BACT limit based upon the lower levels achieved in short term testing, with little margin for fluctuation or error over time. There is no evidence of any similar facilities having a lower permitted limit for SO₂ emissions.

Moreover, the proposed emissions levels represent a removal efficiency of approximately 99.12%. Protestants contend that wet FGD would enable a control efficiency of between

99.4 and 99.9%, but these levels are not significantly higher than the level anticipated by the existing control technology. The difference between a removal efficiency of 99.7%, for example, and 99.1% is less than a 1% differential in control efficiency. While the ALJs understand that small differences can be significant in the context of air permitting, the ALJs do not find that this small difference in *potential* relative control efficiencies would justify requiring wet FGD when it has never in the past been determined to be BACT for pet coke-fired CFB boilers—despite the fact that numerous pet coke-fired CFB boilers have been permitted after wet FGD became a well-accepted control technology. So, the ALJs find that wet FGD is not required for LBEC's proposed facility.

As to the sulphur content of the pet coke, EDF's challenge is based upon a few documents provided in discovery showing tested samples from some possible sources of pet coke. Those documents show that the tested pet coke generally had much less than the 6.7% average sulfur content that LBEC assumed in its emissions analysis.¹⁶² However, the ALJs do not find that those limited documents establish that LBEC's projected sulfur content for its pet coke is unreasonably high. Although LBEC has the burden of proof in this case, its burden on this issue is met by its demonstration that its estimated pet coke concentrations are identical to most, and in line and consistent with any other, recent permit applications. Therefore, it is incumbent on Protestants to then show that those assumptions are not valid. The four documents cited by Protestants, showing testing from just a few possible sources, are not sufficient bases for showing that LBEC's projections are unreasonably high. This is especially true when the samples do not indicate that they are intended to be representative of all pet coke that may be used by LBEC. Given the evidence and the estimates used in other similar permits, the ALJs are unwilling to conclude that LBEC's estimated sulphur concentrations are too high.

For these reasons discussed above, the ALJs find Protestants' challenges to the proposed BACT SO₂ limits to be without merit.

¹⁶² See EDF Ex. C-2, at 1-4 (confidential exhibit). The data contains the testing results of pet coke from three different vessels on four different dates in 2008.

c. The Proposed BACT Particulate Matter (PM) Limits

To control PM/PM₁₀ emissions, the LBEC CFB boilers will be equipped with fabric filters, and LBEC will inject limestone into the boilers and use a polishing scrubber to further reduce PM/PM₁₀ emissions. Using these controls, LBEC has proposed that the facility will be able to comply with the following emissions limits, which LBEC asserts are BACT: 0.011 lb/MMBtu (3-hour average) for filterable PM/PM₁₀ and 0.033 lb/MMBtu (3-hour average) for total PM/PM₁₀.

Protestants argue that the evidence demonstrates that these proposed PM/PM₁₀ emission limits are not BACT. Protestants point out that other facilities have had total PM limits that are nearly half of those proposed by LBEC in this case. And, numerous other facilities have had filterable PM limits lower than those proposed by LBEC here. As such, they contend that LBEC's proposed PM/PM₁₀ limits cannot, in any true meaning, be considered BACT.

First, Protestants cite to the Santee Cooper Pee Dee Generating Station, which has two 660 MW PC boilers and a permitted limit of 0.018 lb/MMBtu (3-hour average) for total PM.¹⁶³ Regarding filterable PM/PM₁₀, Protestants cite to VEPCO's VCHEC facility, which has a filterable PM/PM₁₀ limit of 0.010 lb/MMBtu, and three CFB boiler facilities in Pennsylvania that also have been permitted with limits of 0.01 lb/MMBtu for filterable PM (on a 3-hour average).¹⁶⁴ Further, Protestants have presented data showing many facilities in Florida that, when tested, had total PM emissions of 0.010 or less.¹⁶⁵ Protestants contend that fabric filters—the control technology proposed by LBEC—have achieved particulate control efficiencies in the 99.9999% range. Based on this evidence, Protestants assert that the BACT limit for total PM/PM₁₀ should at most be 0.018 lb/MMBtu (3-hour average), based on the limits for the Santee

¹⁶³ EDF Ex. 1, at 36; EDF Ex. 18, at 3.

¹⁶⁴ The limit of 0.01 appears identical to 0.010, but is not. Without the additional "0" on the end, emissions up to 0.015 could be considered compliant. Two of the three Pennsylvania permits have been corrected to clarify this, and to make the limit be 0.010. LBEC Ex. 31, at 34.

¹⁶⁵ EDF Ex. 1, at 35; EDF Ex. 17.

Cooper facility. Similarly, they argue that the BACT limit for filterable PM/PM₁₀ should at most be 0.010 lb/MMBtu (3-hour average), based on the limits for the VEPCO and Pennsylvania facilities.

In addition, Protestants argue that LBEC should be required to consider and evaluate the use of wet electrostatic precipitator (wet ESP) technology for controlling fine PM, such as PM_{2.5}. Wet ESPs are used at a number of coal and pet coke-fired facilities, including the AES Deepwater, Northern States/Xcel Energy station, Spurlock, and New Brunswick Coleson Cove facilities. Protestants urge that wet ESP may allow for further reductions in fine PM.

Finally, Protestants take issue with the fact that no continuous emissions monitoring systems (CEMS) are required for PM at LBEC. The draft permit calls for compliance demonstration for PM limits by reference method testing, whereas CEMS are required in the permit for other pollutants. Protestants allege that the record demonstrates that PM CEMS is both feasible and appropriate. The most recent permit in the RBLC database reviewed by the ED's staff, the VEPCO VCHEC permit, requires PM CEMS.¹⁶⁶

In response to these various arguments, LBEC disagrees that the proposed PM/PM₁₀ limits should be lowered. First, it notes that all parties agree that fabric filters are the best control technology available for addressing PM emissions. So, the only question is what emissions limits are achievable with this control technology and the additional measures LBEC intends to use. The RBLC database shows that four permits have been issued—one as recently as January 2008—for pet coke-fired CFB units. Each of those had filterable PM/PM₁₀ limits of 0.011 lb/MMBtu, the same as that proposed by LBEC in this case.

As for the various projects cited by Protestants (namely, the VEPCO and three projects in Pennsylvania), LBEC points out that none of those projects are permitted to fire pet coke. Similarly, the Santee Cooper Pee Dee unit is a PC boiler, rather than a CFB boiler, and is also

¹⁶⁶ LBEC Ex. 21, at 7.

permitted to burn both coal and pet coke, rather than just pet coke. Because pet coke allegedly has a higher potential for emitting H_2SO_4 , which is a significant component of condensable PM/PM₁₀, LBEC argues that pet coke-fired boilers are more likely to produce greater PM emissions and, thus, cannot be compared to boilers burning coal or a mixture of coal and pet coke.

LBEC disputes that short-term stack test results, like those from Florida and cited by Protestants, can be used to determine BACT. TCEQ guidance indicates that short-term test results are not relevant to the BACT review because the TCEQ's method looks at what has been accepted as BACT in recent permit reviews, not simply what has been demonstrated on a short-term basis in testing.¹⁶⁷ Moreover, LBEC highlights the fact that the Florida stack test results cited by Protestants contain numerous results above the 0.011 lb/MMBtu proposed in this case. Further, the stack testing includes results from the JEA Northside Petroleum facility—which has pet coke-fired CFB boilers—and that facility has an emission rate of 0.0107 lb/MMBtu, which is nearly identical to the 0.011 lb/MMBtu proposed by LBEC in this case. Given this information from the Florida stack test results, LBEC contends the data supports LBEC's proposed filterable PM/PM₁₀ rate of 0.011 lb/MMBtu.

The ED asserts that its staff reviewed the EPA's RBLC database going back ten years, and found that the proposed performance standard of 0.011 lb/MMBtu is consistent with the lowest of recent proposed permits for CFBs in the U.S. Because the LBEC CFBs will use pet coke, the ED contends that the slightly higher limit of other pet coke projects (0.011 lb/MMBtu) is the appropriate BACT limit for filterable PM, rather than the 0.010 lb/MMBtu cited by Protestants as the permit limit for other recently-permitted CFBs that burn coal.

The ED concedes that some test results indicate that the filterable PM emission rate for baghouse-controlled CFBs may end up being less than half the permitted limit. Therefore, to

¹⁶⁷ LBEC Ex. 28, at 6.

address this possibility, the ED proposes Special Condition No. 50, requiring a downward adjustment of the PM emission limit if the initial and first annual test results are less than half the permitted limit. The ED expects that any adjusted limit would be at least as stringent as the permit limits identified in the RBLC with lower filterable PM. Given Special Condition No. 50, and the data from the EPA's RBLC database, the ED contends that 0.011 lb/MMBtu represents the BACT limit for filterable PM/PM₁₀. Although not really addressing it in closing arguments, the ED also supports 0.033 lb/MMBtu as being the BACT limit for total PM/PM₁₀.

After considering all of the evidence and arguments, the ALJs find that 0.011 lb/MMBtu does represent the BACT limit for filterable PM/PM₁₀. This is the same limit for all of the most-recently permitted pet coke-fired CFBs. Moreover, it is only slightly higher than the 0.010 lb/MMBtu limit requested by Protestants and which has been accepted for CFBs burning coal. The evidence indicates that pet coke is prone to higher PM emissions than coal (a fact which further supports the requirement for a MACT analysis). Thus, it is reasonable to have a slightly higher BACT limit for PM emissions from a pet coke-fired CFB. Although some short-term testing has shown that lower limits may be achieved, the evidence does not establish that lower limits are necessarily sustainable in long term operation.

Protestants take issue with the ED's proposal to use a special permit condition to lower PM limits if actual testing shows emissions to be significantly lower than the proposed BACT limits. Protestants argue that this turns BACT on its head and results in the ED actually punting its responsibility for determining BACT until after the permit is built, whereas such determinations are supposed to be made pre-construction. While this argument has some merit, as discussed elsewhere in this PFD, the ALJs disagree with it in regard to the filterable PM limits.

The proposed filterable BACT PM limits are consistent with the permits for other pet coke-fired CFBs. However, given recent achievements with coal-fired facilities and testing on other facilities, there is reason to believe that emissions may end up being lower for LBEC's pet

coke-fired facility, but the operational data to show it to be true long-term is not necessarily there yet. In this situation, the ALJs find it reasonable for the ED to handle it just the way it has—namely, by setting permit limits to match those of similar facilities, but also including a provision to drop filterable PM limits if actual operations show this to be feasible. And, because of the special permit condition referenced by the ED, the permitted PM limits can be reduced if PM emissions are shown to be substantially less than anticipated. In that situation, the purposes behind BACT are similarly satisfied.

However, the total PM/PM₁₀ limit of 0.033 lb/MMBtu is more troubling. In its response to public comments, the ED indicated that historical measurement techniques for condensable PM (which is a portion of total PM) have been shown to be unreliable and to have an erratic, positive bias. Based on this, in March 2009, the EPA proposed a new test method for measuring condensable PM. The ED assumes that the new method will be implemented and will allow for more accurate PM measurement. Based on this, the ED stated in response to public comment that:

Because the test method for total PM is not reliable and few states require testing for total PM, and because the permit includes a provision to lower the emission limit based on testing, which probably will occur using an improved test method, the *higher* limit of the LBEC is justified as the appropriate choice for total PM BACT.¹⁶⁸

So, basically, the ED and LBEC are saying “we don’t yet know what sort of results the new test method will demonstrate, so we are building a margin of error in. But, we expect the actual emissions will be much less than the permitted limits.” In other words, the ED does not think that 0.033 really reflects the emissions achievable with BACT; but, the ED also does not know what BACT should be under the new testing method.

¹⁶⁸ LBEC 31, at 37. (emphasis added)

This position is troubling to the ALJs because, unlike with filterable PM, it truly does punt the BACT question. At least with filterable PM, emission limits were identical to other pet coke-fired CFB boilers and very close to the best limits permitted for coal-fired facilities. This was consistent with the TCEQ's tiered BACT method, which focuses first on other recently-permitted limits. However, in regard to total PM, the proposed limits are significantly higher than the most-recently permitted limits for other facilities. The proposed total PM limit of 0.033 lb/MMBtu is 83% higher than the limit for the Santee Cooper unit, and 32% higher than the limit in the permit recently issued to NRG.¹⁶⁹ While the ALJs acknowledge that those two units use coal and/or a PC boiler, the record evidence does not demonstrate that those differences alone would justify *as significant a difference* in the permitted limits.

Although the evidence does not establish that the proposed total PM/PM₁₀ limit of 0.033 lb/MMBtu is BACT, it also does not establish exactly what BACT would be. The limits proposed by Protestants may be more stringent than what the proper BACT truly should be—because of the very differences noted in the preceding paragraph. However, the ALJs cannot just accept LBEC's proposed limit simply because the Protestants have not necessarily given a good basis for an alternate limit. So, in the absence of evidence to the contrary, the ALJs conclude that the best calculation of BACT is demonstrated by the Commission's most recent permit, issued to NRG less than four months ago. There, total PM/PM₁₀ was set at 0.025 lb/MMBtu. Therefore, the ALJs recommend that the limit of 0.025 lb/MMBtu be adopted as BACT for total PM/PM₁₀ for LBEC.¹⁷⁰ If LBEC contends that this is simply unachievable, then the permit may either be denied or remanded for further evidence on the BACT for total PM/PM₁₀.

¹⁶⁹ The Santee Cooper limit for total PM is 0.018 lb/MMBtu and the NRG limit is 0.025 lb/MMBtu.

¹⁷⁰ The ALJs recognize the NRG facility uses PC boilers and burns coal. However, the Santee Cooper unit also uses a PC boiler and burns pet coke and coal, so its emissions would be expected to be higher than NRG's. But, its limit was 0.018 lb/MMBtu, whereas NRG's was 0.025 lb/MMBtu, raising the question as to whether NRG's limit could legitimately have been set lower. Under the circumstances, the NRG limit seems appropriate to use, and that no adjustment for the difference between pet coke and coal needs to be made.

d. The Proposed BACT Mercury (Hg) Limits

LBEC proposes to control mercury through various technologies. First, the CFB boiler to be used by LBEC already has inherently lower mercury emissions than a standard PC boiler. In addition, LBEC's proposed use of limestone injection, a polishing scrubber, fabric filters, and activated carbon injection will allow LBEC to keep mercury emissions within a proposed BACT permit limit of 2.0×10^{-6} lb/MMBtu.

Protestants argue that this proposed mercury limit does not represent BACT, citing the pending White Stallion application, for which the BACT analysis was prepared by the same technical consulting firm as LBEC's application. In White Stallion, using the exact same control technologies, the applicant proposes a BACT mercury limit of 8.6×10^{-7} lb/MMBtu burning both coal and pet coke. If burning pet coke alone, the White Stallion mercury limit is even lower: 5.7×10^{-7} . This is less than a third of the limit proposed by LBEC in this case for a pet coke-fired CFB boiler. Further, Protestants note that another recent permit for a pet coke-fired CFB has similarly low mercury limits—namely, the CCND permit has mercury limits of 6.0×10^{-7} lb/MMBtu.¹⁷¹ Given this, Protestants argue that there is no justification for not having a similarly low mercury limit as BACT in this case.

LBEC responds by pointing out that the White Stallion engineers were directed to make certain assumptions and to disregard certain information about the mercury content of the pet coke that would be used as fuel, and these assumptions and modifications affected the projected mercury emissions. In both White Stallion and in this case, the engineers performing the BACT analysis looked at sampling data showing the mercury content in pet coke. Because the mercury content in the pet coke will affect the amount of mercury likely to be emitted when the pet coke is burned, this data was used by the design engineers in calculating expected mercury emissions and control efficiencies for both the LBEC and White Stallion CFB boilers. But, in White

¹⁷¹ LBEC Ex. 31, at 40.

Stallion, the applicant's technical experts disregarded two samples with the highest mercury content, concluding they were outliers. In this case, the experts included the two samples, resulting in a higher expected mercury content for pet coke and, subsequently, higher expected emissions of mercury.

LBEC argues that it was appropriate for its permit engineers to include all of the samples because, by using all of the data, a better sampling of the mercury content of pet coke was obtained than if some data points were excluded. LBEC contends that it will not be able to control the mercury content of the pet coke it receives; therefore, it is more appropriate to be conservative and assume that it will have some with higher mercury content and some with lower mercury content, just as all of the data points would indicate.¹⁷² On this basis, LBEC asserts that its emissions calculations are more conservative than the calculations in the White Stallion case which excluded sampling data.

LBEC's expert further testified that the difference between the White Stallion application and the LBEC application is related to the guarantees that the design engineers are willing to make as to the performance of the control technologies, in consideration of the mercury content of the pet coke. In particular, the White Stallion design engineers and contractors were willing to give greater performance guarantees than the LBEC contractors and engineers.¹⁷³ Based on this, LBEC is unwilling to agree to the lower BACT limits proposed in the White Stallion case.

Turning next to the low emission limit in the CCND permit, LBEC notes that emission limit was the result of a settlement agreement and is not even included in the permit itself. Instead, the permit reflects a higher limit. Because the low limit was the result of a settlement agreement, LBEC argues that it "in no way reflects an emission reduction performance level accepted as BACT in a recent permit review" as is required under the TCEQ's BACT analysis.

¹⁷² The term "conservative" is used differently here than when used to discuss modeling. Here conservative means allowing a higher emissions limit.

¹⁷³ Tr. at 261-262.

Thus, LBEC urges that the CCND emission limit that was the result of a settlement agreement is not relevant in the BACT analysis in this case.

Although the ALJs agree with some of LBEC's contentions, they ultimately find that LBEC's proposed mercury limit is not BACT. White Stallion and LBEC will use the exact same types of boilers and control technologies and relied on the same underlying data set for calculating the mercury content for pet coke (except for the adjustment made in White Stallion). Given this, one would expect that their mercury emissions limits would be similar. But, they are not. Instead, White Stallion proposes a mercury emission limit for pet coke that is roughly one-third of that proposed by LBEC.

To justify these distinctions, LBEC presented two points that make an interconnected argument. Namely, the design engineers for White Stallion were willing to give greater assurances as to the effectiveness of the control technology to be used there. But, this was predicated on the fact that the White Stallion engineers excluded the two highest data samples reflecting higher mercury content for pet coke, resulting in lower expected emissions of mercury. These points, however, do not provide a legitimate justification for LBEC's proposed higher limit.

First, the ALJs address the exclusion of data samples regarding the mercury content of pet coke. LBEC asserts it was reasonable to include all of the data points because it cannot control the mercury content of the pet coke it will receive. On the data set in issue, there are 11 entries for pet coke. Of those 11 entries (all from different facilities), eight reflect a mercury content of 0.05 ppmw or less.¹⁷⁴ The other three are 0.32, 0.53, and 0.84 ppmw.¹⁷⁵ In White Stallion, the 0.84 and 0.53 data points were excluded as outliers, resulting in a lower average mercury concentration for the pet coke. LBEC chose to leave these in, resulting in a higher expected mercury concentration for pet coke. This alone might be reasonable by LBEC, in order

¹⁷⁴ LBEC Ex. 33.

¹⁷⁵ LBEC Ex. 33 (in particular, the Shell, Star, and Utility Fuels data points).

to give it some margin of error. However, LBEC went further, and included an additional 25% “safety factor” to account for variability in the pet coke supply and in the effectiveness of the activated carbon injection. In the ALJs’ opinion, this additional step is unreasonable if LBEC includes the outlying data points for mercury content because, by including the extremely high data points, LBEC is already allowing for a margin of error.

The two data points excluded by White Stallion have mercury content that is, respectively, at least ten times and 20 times more than the mercury content for eight of the other nine samples. And, they are 66% and 163% higher than the only other sample (*i.e.*, the .32 ppmw data point). They appear to be outliers and the ALJs can understand why the engineers in White Stallion chose to exclude them. Including them is not unreasonable if the purpose is to allow for a safety margin. But, then adding another safety margin of 25% on top of that results in duplicate safety margins being built into the calculations. The ALJs find this unreasonable.

Moreover, the record is not entirely clear that these differences in the data relied upon are the reason for the differing emission limits between White Stallion and LBEC. When questioned at the hearing, LBEC’s BACT expert did not provide a clear correlation between the expected mercury concentrations of the pet coke and the ultimate proposed BACT emission limits. Initially, he testified the calculated emission limits were not affected by the input concentrations. When questioned further, though, he indicated that the input concentrations did affect the output emissions limits. Then, when the ALJs were confused about the apparent inconsistency in his testimony and questioned him further, he gave the following answer:

“Your honor, I can’t speak to all the technical considerations that go into arriving at a performance standard for mercury, but I assume it’s complicated and not as straightforward as that.”¹⁷⁶

¹⁷⁶ Tr. at 263. The ALJs would encourage the Commissioners to review pages 258-263 of the transcript to see how confusing the testimony was on this issue and how the testimony was unclear on why there was a difference between the White Stallion and LBEC BACT mercury emissions limits. Ultimately, it appears that the pet coke mercury content inputs do affect emission projections—albeit somewhat indirectly through their consideration by the permit engineers—rather than directly in any of the modeling calculations presented in this case.

While the ALJs appreciate the witness's candor, it is troubling given that he is the expert relied upon by LBEC for its BACT analysis. The BACT analysis should be based upon knowledge of the available control technologies, how they work, and what levels of control they should be expected to achieve. If he, as the BACT analysis expert presented by LBEC, cannot explain the technical considerations that go into arriving at a performance standard for mercury, then that certainly causes one to question the value of his opinion that the performance standards proposed genuinely represent BACT.

Further, to the extent that part of the difference in proposed emissions limits is simply based upon different guarantees from the contractors and design engineers as to the performance of certain control technologies, this is not a sufficient justification for different BACT limits. BACT is intended to be technology forcing. If one set of design engineers or contractors are willing to guarantee a certain level of performance, then that level of performance should be able to be achieved by others who are using the same control technologies, same boiler types, and same fuel types. If not, then other facilities need to utilize those same design engineers or contractors to get to that level of performance. Certainly, there can be differences in facilities and fuels that would justify different guarantees, and it is not a simple comparison. But, the burden is on the applicant to justify such differences. In this case, LBEC has not done so. Its experts could not explain the differences or any justification for them—other than the exclusion of two data points for the mercury content of pet coke, which the ALJs have found unreasonable. The evidence in the record does not justify a legitimate reason why White Stallion and CCND are willing to meet a mercury emission standard that is less than one-third of LBEC's proposed standard, using the same type of boilers, control technologies, and fuel, and yet LBEC is not.

Therefore, under the evidence presented, the ALJs conclude that the BACT emission limit for mercury, using the CFB boiler and with pet coke as the fuel source, is 6.0×10^{-7} lb/MMBtu. The permit should be revised to reflect this emission limit, and LBEC should be required to meet it.

e. The Proposed BACT Carbon Monoxide (CO) Limit

LBEC's proposed CO limit is 0.11 lb/MMBtu (12-month average). Protestants cite to other existing permits with lower CO limits, using a 30-day average, as evidence that LBEC's proposed limit is not BACT. For example, Protestants cite to two recent permits with CO limits of 0.10 lb/MMBtu (30-day average).¹⁷⁷ Those two permits have a higher 24-hour limit, 0.15 lb/MMBtu, but Protestants point out that an annual average, like that proposed by LBEC here, should be lower than both the 30-day and the 24-hour averaging period limits. Moreover, Protestants take issue with the fact that LBEC's proposed permit has no 30-day limit. Protestants argue there is absolutely no basis for establishing annual limits for LBEC that are higher than 30-day limits in other permitted facilities. Accordingly, Protestants urge that the LBEC permit contain a 30-day limit for CO of 0.10 lb/MMBtu, to match those of the two permits cited. If that is not adopted, then, at a minimum, the annual limit for CO should be set at 0.10 lb/MMBtu.

LBEC disagrees that BACT would require lower CO emissions limits than it proposes. Although acknowledging the two facilities with lower permit limits for CO cited by Protestants, LBEC asserts that those facilities are not comparable because they also have higher limits for periods when they are not operating at full capacity. Namely, those two facilities have CO limits of 0.15 lb/MMBtu (30-day average) when they are operating at less than full capacity. This is because "at lower loads, combustion can potentially be more incomplete resulting in higher CO emissions." Because those permits have different limits, depending upon their load levels, LBEC argues they are not comparable to LBEC's proposed permit.

Instead, LBEC notes that other recently-permitted facilities have higher CO levels than those proposed by LBEC in this case. In particular, the CCND facility—which is the most recent permit—has a CO permit limit of 0.15 lb/MMBtu.¹⁷⁸ In addition, LBEC points out that the

¹⁷⁷ The two facilities are the CLECO Rodemacher 3 unit and the Entergy Little Gypsy 3 unit in Louisiana. EDF Ex. 1, at 38.

¹⁷⁸ LBEC Ex. 35, at 3; LBEC Ex. 34, at 6.

RBLC database reveals recent permits with CO limits between 0.1 and 0.2 lb/MMBtu.¹⁷⁹ As such, it contends its proposed limit of 0.11 lb/MMBtu is at the low end of recent permits and is consistent with BACT.

After considering the evidence and arguments, the ALJs find that LBEC has failed to show that its proposed limit of 0.11 lb/MMBtu (12-month average) is BACT for CO emissions. LBEC's distinction of the two Louisiana permits with lower short-term averages is simply not persuasive. Although pointing to those facilities' higher averages for less than full capacity, LBEC has failed to indicate how this is relevant. LBEC is not seeking to operate or be permitted for periods of less than full capacity. Nor has LBEC offered any evidence to show how its operation would warrant a more fair comparison to the Louisiana facilities' operation at less than full capacity. While the ALJs acknowledge that the creation of different limits for periods of full capacity and less than full capacity can lead to distinctions in the permits, LBEC has given no explanation why the permitted limits for full capacity should not be a fair comparison to LBEC's proposed permit limits. There may be valid reasons, but LBEC has just not identified them; instead, LBEC's argument is akin to saying "they're just different." That argument is not sufficient when it is LBEC's burden to establish that its proposed limits are BACT.

Moreover, LBEC's reference to the RBLC database is not helpful to its position. That data shows that the facilities using pet coke all have the lowest CO limits, ranging between 0.10 lb/MMBtu for the two most recently-permitted CFB boilers, to 0.13 and 0.15 lb/MMBtu for the two older facilities permitted in 2003. All of the other facilities with higher averages are burning different fuels, including lignite and waste coal. Accordingly, this further cuts against LBEC's argument that 0.11 lb/MMBtu represents BACT for CO, and makes LBEC's proposed limit even more out of line with those other recently-permitted facilities.

¹⁷⁹ LBEC Ex. 4, at 11.

Given that there currently are permits with CO limits lower than those proposed by LBEC in this case, and absent additional justification from LBEC, the ALJs cannot conclude that 0.11 lb/MMBtu represents BACT for CO emissions. Rather, it appears that 0.10 lb/MMBtu more likely represents BACT.¹⁸⁰ Accordingly, the ALJs recommend that the limit of 0.10 lb/MMBtu be adopted as BACT for CO or, if LBEC contends that this is simply unachievable, the ALJs recommend the permit either be denied or remanded for further evidence on the BACT for CO.

f. The Proposed BACT Volatile Organic Compounds (VOC) Limits

LBEC has proposed a limit of 0.005 lb/MMBtu (3-hour average) as BACT for VOCs. To achieve this, LBEC proposes to use good combustion practices. Protestants cite to recent permits that have a limit of 0.0047 lb/MMBTu for VOCs, and contend that LBEC's permit limits should be lowered accordingly to match this lower limit. Protestants argue that LBEC's limit is an annual limit, whereas these other facilities have lower limits for a shorter time period—namely a 30-day averaging period. LBEC agrees that the lower limits in the other permits are based upon 30-day averaging periods. But, LBEC contends that its BACT limit for VOCs is based upon a 3-hour averaging period, not an annual standard. Given this, LBEC argues that its slightly higher limit is justified, because it is consistent with the premise that longer term limits should be lower than shorter term limits. Thus, LBEC asserts its limit, for a 3-hour averaging period, does truly represent BACT.

The confusion in this case arises because the permit has annual limits, but also has provisions requiring demonstration of compliance through testing using 3-hour averaging periods.¹⁸¹ As such, the limits may be more akin to a 3-hour average limit. Given the requirement of demonstration through a 3-hour averaging period—which would be expected to be slightly higher than a 30-day averaging period, to allow for fluctuation—and the relatively close permit limits for VOCs (0.0050 for LBEC's permit versus 0.0047 in the other permits

¹⁸⁰ Sierra Club Ex. 15, at 63-64.

¹⁸¹ LBEC Ex. 31, at 55 and 73 (compare Special Conditions 11.B and 37); Tr. at 1913-1918.

using a 30-day averaging period), the ALJs find that LBEC's proposed limit for VOCs does represent BACT.¹⁸²

g. The Proposed BACT Sulfuric Acid (H₂SO₄) Mist Limits

As the ED notes, H₂SO₄ (*i.e.*, sulfuric acid mist) is an acid gas and a component of condensable PM emissions. LBEC proposes to control H₂SO₄ through its use of a limestone bed CFB and a polishing scrubber, which will provide a 95% removal efficiency. Through the use of these control devices, LBEC proposes a BACT permit limit for H₂SO₄ of 0.022 lb/MMBtu (3-hour average).

Protestants argue that H₂SO₄ limits should be even lower. First, Protestants note that the RBLC database reveals numerous permitted coke-fired CFBs with far lower emission limits for H₂SO₄. But, rather than relying on these, the ED instead relies on a proposed special condition, which may require a downward adjustment in emission limits depending on what actual emissions are shown to be after startup. Protestants contend this is unacceptable, as BACT limits must be determined before construction. And, using the TCEQ's own Tier I analysis, Protestants argue that the existence of other recent pet coke-fired CFBs with lower limits should require LBEC's limit to be lowered.

Protestants also contend that LBEC's emissions limit is based upon too high of an estimated sulfur content for pet coke. Using a 4% sulfur content for pet coke (instead of the 6.7% used by LBEC) and keeping other things equal in LBEC's calculations, Protestants calculate that the H₂SO₄ limits should be 0.009 lb/MMBtu. Further, Protestants claim that the use of a wet ESP would allow for a control efficiency of 99.9%, thus reducing H₂SO₄ emissions

¹⁸² The ALJs do not give significant discussion to this issue because the parties' arguments were very limited and appear to be based mostly on some disagreement of whether LBEC's proposed limit is an annual standard or a 3-hour averaging standard. Having concluded that it should be treated as a 3-hour standard, and given how close it is to the Protestants' proposed standard, the ALJs see no need for further discussion.

even further—down to 0.002 lb/MMBtu. Therefore, Protestants urge that the 3-hour BACT limit for H₂SO₄ should be 0.002 lb/MMBtu or, at the worst, 0.009 lb/MMBtu.

LBEC argues that Protestants' use of a 4% sulfur content is not justified, pointing to the evidence showing all recent permits for pet coke-fired boilers have used a sulfur content range of 6% to 8% (The ALJs discuss this above in regard to SO₂ emissions, so the arguments will not be restated here). Therefore, LBEC argues that its use of a 6.7% sulfur content for pet coke was proper. Further, LBEC disagrees that wet ESP represents BACT for its proposed CFB boilers. LBEC points to the testimony of Mr. Hamilton, the ED's engineer, who testified that wet ESP would not be cost-effective for the small amount of additional control it would provide.¹⁸³ Even Sierra Club's expert, Dr. Fox, agreed that she was not aware of any recent permit for a pet coke-fired CFB that has required a wet ESP,¹⁸⁴ and the ED's BACT review did not reveal any more stringent H₂SO₄ controls than limestone injection and a polishing scrubber.¹⁸⁵

Although LBEC concedes that the RBLC database reveals other pet coke-fired CFBs with lower H₂SO₄ limits, it contends the ED's response to public comments shows why the higher limits are justified. There, the ED stated that "establishing the appropriate limit for H₂SO₄ and other condensing species is difficult and test results using the EPA test method have frequently produced questionable results."¹⁸⁶ So, because it is difficult to properly measure and quantify H₂SO₄, LBEC justifies its higher limit and indicates it will be lowered via Special Condition No. 50 if actual emissions are shown to be lower. For all of these reasons, LBEC argues that its proposed H₂SO₄ limit is BACT.

As noted previously, the ALJs agree that LBEC's use of a 6.7% average sulfur content for pet coke is appropriate. Similarly, the ALJs find that wet ESP is not required for the CFB

¹⁸³ LBEC Ex. 500, at 28.

¹⁸⁴ Tr. at 1637-1638.

¹⁸⁵ LBEC Ex. 4, at 14.

¹⁸⁶ LBEC Ex. 31, at 36.

boilers proposed here. Although Protestants contend that wet ESP could increase the removal efficiency from 95% to possibly 99.9%, even one of their own experts, Dr. Sahu, appears to concede that a 95% control efficiency would be consistent with BACT.¹⁸⁷ Given that the record demonstrates no other pet coke-fired CFBs equipped with wet ESP to control H₂SO₄, coupled with Dr. Sahu's concession that 95% removal efficiency is consistent with BACT, the ALJs decline to find that wet ESP should be required here.

However, the ALJs find no justification for the disregard by the ED and LBEC of the lower H₂SO₄ limits shown in the RBLC database for other pet coke-fired CFBs. Using the TCEQ's own Tier I analysis, these other permitted limits should compel LBEC's limits to be similar, barring a sufficient justification or explanation as to any differences. Here, the only explanation given is basically that "H₂SO₄ is hard to measure." That alone is simply no justification at all. Presumably, it is just as hard to measure and quantify for those other pet coke-fired CFBs as it would be for LBEC's pet coke-fired CFBs. That did not stop those permitting authorities from finding it appropriate to set an H₂SO₄ limit lower than proposed here. Having a special condition that requires permit limits to be lowered later based upon actual emissions will not satisfy BACT analysis requirements.

It is particularly troubling that the limit proposed by the ED as BACT is—in the ED's own estimation—more than *twice* the expected actual emissions of H₂SO₄ from LBEC's proposed boilers. This is shown by the ED's response to public comments, where the ED stated:

Special Condition No. 47 of the proposed LBEC permit requires a downward adjustment of the H₂SO₄ emission limit if the initial and first annual test results are less than half the permitted limit. Based on the permit limits for petroleum coke fired CFBs found in the RBLC, it appears likely that a downward adjustment of the LBEC limit will need to be made.¹⁸⁸

¹⁸⁷ EDF Ex. 1, at 40.

¹⁸⁸ LBEC Ex. 31, at 36.

So, as the ED notes, a downward adjustment will be made if actual emissions are less than half of the permit limit. Then, the ED says this is *likely*. So, essentially the ED is conceding that the permit limit is likely to be more than double the expected emissions. To the ALJs, it seems inconceivable that a limit that is more than twice what is actually expected can be considered BACT.

The ALJs believe that the permit limit for H₂SO₄ should be set consistently with the other pet coke-fired CFBs in the RBLC database. The highest limit shown by the ED's response to public comments is .0045 lb/MMBtu.¹⁸⁹ This is within the range recommended by Dr. Sahu, as well. Even though the ALJs do not necessarily recommend Dr. Sahu's modifications, they do find it appropriate to use this limit, since it is supported by other permits in the RBLC database. Therefore, this is the limit recommended by the ALJs. If the Commission concludes this is too low, the highest the record evidence would support is 0.009 lb/MMBtu, as noted by Dr. Sahu as being the highest conceivable limit that could be consistent with BACT

Accordingly, the ALJs recommend that the limit of 0.0045 lb/MMBtu be adopted as BACT for H₂SO₄ or, if LBEC contends that this is simply unachievable, the ALJs recommend the permit either be denied or remanded for further evidence on the BACT for H₂SO₄.

h. The Proposed BACT HCL and HF Limits

LBEC proposes to control the emission of hydrogen chloride (HCl) and hydrogen fluoride (HF) through the injection of limestone into the boilers, and the use of polishing scrubbers. These will provide a 95% control efficiency. Through the use of these control devices, LBEC proposes annual performance standards for HCl of 0.00089 lb/MMBtu and 0.000082 lb/MMBtu. Because the standards will be met through compliance with a 3-hour average, as evidenced by stack testing, LBEC has revised the proposed limits to reflect the

¹⁸⁹ LBEC Ex. 31, at 35-36.

following as demonstrating BACT for 3-hour averaging periods: 0.0044 lb/MMBtu for HCl and 0.00038 lb/MMBtu for HF.

Protestants argue that the increase in the permit emissions rates to reflect 3-hour limits was inappropriate and constituted an amendment to the permit. They contend that the draft permit cannot be amended during the hearing, and that any changes to the emissions limits certainly cannot be done during the hearing as “corrections” to prefiled testimony. Protestants also take issue with the assumptions that LBEC used in calculating HCl and HF emissions. LBEC calculated the average chlorine/fluorine content of pet coke, added a 25% safety margin, and then used a 95% control efficiency to come up with expected HCl and HF emissions. Protestants argue that a 95% control efficiency is the *minimum* that is achievable with LBEC’s proposed controls. Protestants argue that an even higher control efficiency should be expected with LBEC’s controls, or through consideration of additional controls, such as wet FGD.

Protestants cite to three permits that have been issued with lower HCl limits than LBEC proposes.¹⁹⁰ Two of the three permitted facilities proposed to use wet FGD, which Protestants contend is capable of achieving greater than 99% control efficiency for HCl and HF. This control efficiency is supported by two other facilities using wet FGD with an expected control efficiency of greater than 99%: the Seminole power plant and the Cliffside Unit 6. Based on this, Protestants assert that LBEC should be required to use wet FGD to reduce HCl and HF emissions even further.

LBEC disagrees that it changed the emission rates in the permit. Rather, LBEC contends that it merely conformed the permit limits to match the requirements of Special Condition 11.B., which requires that compliance with permit limits be demonstrated by a 3-hour test. Accordingly, LBEC revised its permit limit from an annual average to the equivalent 3-hour limit. LBEC asserts this was neither an amendment nor an increase in the permitted limits.

¹⁹⁰ The permitted plants are Longview in West Virginia, Weston 4 in Wisconsin, and Trimble in Kentucky. Sierra Club Exs. 326, 327, and 328.

LBEC also disagrees that it should be required to use wet FGD as a control device. First, LBEC notes that none of the facilities cited by Protestants use pet coke-fired CFB boilers. And, none of Protestants' expert witnesses could identify a single pet coke-fired CFB boiler that are equipped with wet FGD.¹⁹¹ Rather, LBEC contends the evidence, including a review of other recently-permitted CFB boilers, clearly indicates that the use of limestone injection and a polishing scrubber (with a 95% control efficiency) represent BACT for controlling HCl and HF emissions.¹⁹²

After considering the arguments and evidence, the ALJs conclude that LBEC's proposed emission limits and controls do represent BACT for HCl and HF. As LBEC correctly notes, the use of limestone injection and a polishing scrubber to achieve a 95% control efficiency has been deemed BACT in the recent pet coke-fired CFB boiler permits for CCND and Formosa. In the absence of evidence showing that other pet coke-fired CFBs have used wet FGD or achieved higher control efficiencies, the ALJs find Protestants' arguments to be without merit on this point.

Similarly, LBEC's changes to the emission rates for HCl and HF during the hearing do not appear to be major amendments. Although the parties did not argue this issue extensively and presented little evidence on it, it appears to the ALJs that LBEC's expert did nothing more than provide equivalent 3-hour emission rates to replace the annual averages in the application, to make the rates consistent with the 3-hour measurement time required by Special Condition 11.B. for determining compliance with the permit limits. It appears that, instead of later taking the 3-hour measurements required by Special Condition 11.B. and extrapolating to compare to annual averages allowed in the permit, LBEC is proactively revising the annual averages to show what the standard will be for the 3-hour average demonstrated by the compliance stack testing required under Special Condition 11.B. So, instead of doing an adjustment later to compare the stack testing to the annual average, LBEC is making the adjustment now to solidify the limit that

¹⁹¹ Tr. at 1427, 1633, and 1637.

¹⁹² LBEC Ex. 1, at 66 and 68.

must be met in the 3-hour testing. The ALJs do not find this to be inappropriate. Therefore, the ALJs find that LBEC's proposed HCl and HF limits are consistent with BACT requirements.

4. Additional BACT Issues

a. Challenges to TCEQ's BACT Analysis Approach

As they have done in other cases, Protestants continue to challenge the ED's three-tiered methodology for conducting the BACT analysis, claiming it is insufficient and lacking when compared to the EPA's BACT analysis method. The Protestants agree that, in theory, the ED's three-tiered approach to conducting the BACT analysis could reach the same result as the EPA's methodology. But, in practice it does not because the ED typically stops the analysis after Tier I. Thus, the ED rarely reaches Tier III, which is the tier that most closely resembles the EPA's method of conducting a BACT analysis.

Protestants argue that the TCEQ's Tier I BACT methodology, which involves a comparison of the applicant's BACT proposal to emission reduction performance levels accepted as BACT in recent permit reviews involving the same process or industry, simply perpetuates existing technology and does not force the use of new and better control technology. Rather, it stops after a look at other recent permits unless the ED's permit engineer is aware of other new developments. Protestants allege that this puts the onus on the permit engineer to simply know (or research himself) whether new developments exist. In contrast, the EPA's method requires the applicant to identify all potential control technologies that exist and could possibly be used. Protestants concede that the EPA's method does not have to be strictly followed in this case. But, they argue that the method that is followed must be sufficient to meet the purposes of the BACT requirements. Because the analysis in this case essentially stopped after the ED's Tier I analysis, Protestants argue that it was simply inadequate and did not meet the purposes of the BACT requirements.

LBEC did not specifically respond to Protestants' contentions about the TCEQ's BACT methodology, as such arguments were raised initially by Protestants in reply briefs. Despite not having a specific response by LBEC, the ALJs find Protestants' arguments to be without merit.

Although the ALJs agree that the EPA's top-down BACT approach may be better designed to be technology-forcing, the ALJs also conclude that the TCEQ's tiered methodology is the proper method for analyzing BACT in this case. This same methodology has been used by the TCEQ in evaluating BACT at least since 2001, when the guidance document was issued. The methodology was used in both the *Oak Grove* case and the *Sandy Creek* case, and the Commission's Final Order ratified its use in those cases.

As for the actual application of the methodology by the ED, the ALJs find that issue is better addressed within the context of the BACT analysis for each of the pollutants in issue. In fact, as noted above, the ALJs have found that the ED's BACT analysis was insufficient in certain regards. Moreover, the ALJs have recommended that certain BACT limits be lowered because the analysis and/or limits proposed do not appear to comply with BACT requirements. In light of those recommendations above, the ALJs see no need to re-address the sufficiency of the ED's BACT analysis—other than to reaffirm the TCEQ's ability to rely upon its three-tiered methodology in general. Accordingly, Protestants' general challenge to the TCEQ's BACT methodology or its application is without merit, except as noted in regard to specific pollutants discussed above.

b. Consideration of Integrated Gasification/Combined Cycle (IGCC)

Protestants argue that LBEC and the ED should have considered and evaluated the possibility of using integrated gasification/combined cycle technology (IGCC) at the proposed facility as part of the BACT analysis. IGCC is an electric generation technology that is different than the CFB technology proposed for the LBEC facility. Protestants point to recent pronouncements by EPA Administrator Lisa Jackson and also the Environmental Appeals Board

indicating that consideration of IGCC may be appropriate as part of the BACT analysis.¹⁹³ They further note that these decisions have reversed an earlier determination by EPA that IGCC need not be considered as part of the BACT analysis. Therefore, they argue that prior decisions by the Commission to not require consideration of IGCC in the BACT analysis should be set aside and that evaluation of the feasibility of IGCC should be required in this case.

In contrast, LBEC contends that because IGCC is an entirely different electric generation technology, it would change the nature of the project. LBEC points out that the Commission has previously decided that IGCC does not need to be evaluated as part of the BACT analysis. Specifically, in the *Sandy Creek* case (and later in the *Oak Grove* case), the Commission determined that applicants intending to use different types of boilers (e.g., a pulverized coal boiler) were not required to consider other electric generation technologies such as IGCC in their BACT analyses.¹⁹⁴ The Commission's decision was upheld on appeal, by both the trial court and the court of appeals.¹⁹⁵ Based on this, LBEC argues that the issue has been resolved and no analysis of IGCC is required for the BACT analysis.

The ALJs agree with LBEC, and find that both the Commission's prior determination and recent court decisions have made it clear that IGCC does not have to be considered in the BACT analysis. Despite what might be indicated by recent EPA pronouncements, the ALJs do not believe that an entirely different process for electric generation is a control technology that must be considered in the BACT analysis. When a process changes the scope and nature of the entire project—as changing the method for electric generation does—then it does not have to be considered in the BACT analysis. This principle has been established by the *Sandy Creek* case and reaffirmed recently by the Georgia Court of Appeals in another case.¹⁹⁶ Accordingly, the

¹⁹³ EDF's Closing Brief, at 50 [citing *In Re: Desert Rock Energy Company, LLC*, 2009 WL 3126170 (E.A.B., Sep. 24, 2009)]; Sierra Club's Reply to Closing Argument, at 31-33.

¹⁹⁴ LBEC Exs. 29 and 30.

¹⁹⁵ *Blue Skies Alliance v. TCEQ*, 283 S.W.3d 525 (Tex.App.—Amarillo 2009, no pet.).

¹⁹⁶ *Longleaf Energy Assocs., LLC v. Friends of the Chattahoochee*, 681 S.E.2d 203 (Ga.Ct.App. 2009). The ALJs recognize that the Utah Supreme Court, interpreting a Utah state statute, recently reached a different

failure to evaluate IGCC in this case should not be a consideration in the Commission's evaluation of LBEC's requested permit

c. Carbon Dioxide (CO₂) and other Greenhouse Gases

Protestants argue that LBEC's BACT analysis fails because it does not account for carbon dioxide (CO₂) or other greenhouse gases. Protestants assert that greenhouse gases are pollutants for which BACT limits must be established. More specifically, Protestants focus on carbon dioxide, arguing that recent court and EAB decisions have made clear that greenhouse gases such as CO₂ must be regulated as air pollutants and, thus, BACT limits must be established. However, neither LBEC nor the ED conducted a BACT review nor established BACT limits for CO₂. Therefore, Protestants argue the BACT requirements have not been met.

In regard to greenhouse gases (and specifically CO₂), LBEC notes that CO₂ is not subject to regulation under existing Texas law or the federal Clean Air Act. The Commission has consistently declined to regulate CO₂ on an *ad hoc* basis when the issue has been raised in prior permitting cases—most recently as December 2009—and it declined to regulate CO₂ as a greenhouse gas in 2000.¹⁹⁷ Therefore, LBEC asserts it is under no obligation to conduct a BACT analysis regarding CO₂.

At the hearing, the ALJs excluded evidence regarding CO₂ and greenhouse gases on the basis that such evidence was not relevant to the issues to be addressed in this case. The ALJs continue to stand by that position, because past federal and Commission precedent have made it clear that there is no currently-existing mechanism for regulating CO₂ and greenhouse gases not specifically identified as required for PSD BACT review under state law or the federal Clean Air Act.

conclusion. However, in the absence of any Texas precedent adopting the reasoning of that case, the ALJs give it little persuasive value.

¹⁹⁷ See, e.g., Final Order in NRG matter.

However, the ALJs acknowledge that the United State Supreme Court has concluded that certain greenhouse gases, including CO₂, are air pollutants under the federal Clean Air Act.¹⁹⁸ Based upon that conclusion, the Supreme Court directed the EPA to determine whether such pollutants endanger public health or welfare. On December 7, 2009, the EPA announced a finding that greenhouse gases, including CO₂, endanger public health and welfare. However, the EPA also specifically declined to apply its findings to the PSD program and instead limited its findings to emissions from new motor vehicles and new motor vehicle engines.¹⁹⁹ Given the current state of the law and lack of any regulatory mechanism—including any requirement for a BACT review—the ALJs find no basis for concluding that LBEC's application, which was submitted well before the EPA's endangerment finding, is deficient or must include a BACT analysis for CO₂ or other greenhouse gases.

F. Other Permit Conditions

1. Plant-Wide Applicability Limits (PALs)

The Commission has adopted rules providing for plant-wide applicability limits (PALs) at 30 TEX. ADMIN. CODE § 116.180-116.198. The PALs allow facilities to obtain a plant-wide cap on air emissions. The regulatory agencies then treat air pollutants emitted by a facility as a whole rather than by each emission point or unit. To set a PAL, a facility agrees to plant-wide emissions caps. In return, the facility could then make changes without obtaining a major NSR permit, provided emissions do not exceed the plant-wide cap.²⁰⁰

The LBEC Draft Permit, Special Condition 44, contains the applicable PALs as related to the Application. LBEC urges that the PALs should be approved in accordance with TCEQ rules. LBEC

¹⁹⁸ *Massachusetts v. EPA*, 549 U.S. 497, 510 (2007).

¹⁹⁹ 74 Fed. Reg. at 66,496 and 66, 516 n. 17.

²⁰⁰ See <http://www.epa.gov/NSR/documents/factsheet.pdf> (last accessed on March 15, 2010.)

asserts that the Commission has issued 11 PAL permits and has an additional eight under consideration.²⁰¹

Protestants disagree, noting that while the TCEQ has adopted the PALs rule, the rule has not been incorporated into the Texas SIP. In fact, Protestants assert that EPA has proposed to disapprove the Texas PALs as a part of the Texas SIP.²⁰² In accordance with *Sierra Club v. Tennessee Valley Auth.*, 430 F.3d at 1346-50, Protestants insist that a state may not administer the federal Clean Air Act pursuant to delegation until such rules are approved by EPA as a SIP revision.²⁰³ In EPA's response to the proposed Texas SIP revision, Protestants note that EPA has rejected the exact scenario presented by LBEC, an attempt to authorize a PAL for a new major stationary source which lacks any emissions for review. Specifically, EPA noted:

The submittal lacks a provision which limits applicability of PAL only to an existing major stationary, source, and which precludes applicability of a PAL to a new major stationary source, as required under 40 C.F.R. § 51.165(f)(1)(i) and 40 C.F.R. § 51.166(w)(1)(i), which limits applicability of a PAL to an existing major stationary source. In the absence of such limitation, this submission would allow a PAL to be authorized for the construction of a new major stationary source. In EPA's November 2002 TSD for the revised Major NSR Regulations, we respond on pages I-7-27 and 28 that actual PALs are available only for existing major stationary sources, because actual PALs are based on a source's actual emissions. . . . Moreover, the development of an alternative to provide new major stationary sources with the option of obtaining a PAL based on allowable emissions was foreclosed by the Court in *New York v. EPA*, 413 F.3d 3 at 38-40 (DC Cir. 2005) ("New York I") (holding that the Act since 1977 requires a comparison of existing actual emissions before the change and projected actual (or potential emissions) after the change in question is required).²⁰⁴

²⁰¹ LBEC's *Response To Closing Arguments*, at 78 (the ALJs have not verified this allegation contained in LBEC's brief).

²⁰² 74 Fed. Reg. 48469-71, 48474.

²⁰³ See *Sierra Club v. Tennessee Valley Auth.*, where the state's employment of a 2% de minimis exception rule to opacity limitation incorporated in SIP was improper in absence of acceptance of the exception rule by EPA as a SIP revision.

²⁰⁴ 74 Fed. Reg. 48467, 48474.

Protestants fail to see how LBEC may be granted a PAL when the EPA and federal courts have rejected it and when it is not provided for in the Texas SIP. For these reasons, Protestants urge that LBEC's request for PALs be rejected.

While admitting that EPA filed its response to the Commission's rules providing for PALs on September 23, 2009, LBEC responds that EPA is not expected to take final action until August 31, 2010, following the review of public comments. This timing is apparently of great significance to LBEC, which notes that Mr. DiSorbo testified he was unaware of EPA's objection at the time the Application was reviewed and that he had previously prepared applications for new sources in Texas that included PALs.²⁰⁵ Ultimately, LBEC insists that at this point EPA has neither approved nor disapproved PALs for new sources and, thus, PALs are still available for use with new facilities in Texas.

The ED states that EPA has yet to take final action, so the Commission's PAL rules are still in effect. The ED notes that EPA has suggested it will take final action by August 31, 2010.

After reviewing the parties arguments on this issue, the ALJs recommend the PAL issue be remanded for further consideration. As an initial point, certain other issues must be addressed on remand before PALs could even be established.²⁰⁶ And, in light of these other areas of remand suggested in this PFD, the ALJs find it probable that EPA's final decision regarding PALs in the Texas SIP will be made before this Application is reconsidered. At this point, it certainly appears that the EPA may take action to prevent PALs from being implemented for new facilities, like that involved here. However, should the EPA delay its decision until after the Application is fully addressed, the ALJs are not aware of any legal authority that would currently prohibit the Commission from granting the requested PALs, given its existing precedent of granting them in the past.

²⁰⁵ Tr. at 279.

²⁰⁶ Protestant Clean Economy Coalition noted that PALs may not be set as a baseline until the LBEC emissions are appropriately established. CEC's *Closing Brief*, at 14.

2. PM CEMS

The Draft Permit provides that compliance with total PM emission limits will be demonstrated through reference testing, rather than through continuous emission monitoring systems (CEMS). However, Protestants argue that PM CEMS is a proven technology that allows for accurate monitoring of PM emissions. Further, because the permit's MAERT for PM is 33.9 pounds per hour, the only way to establish compliance with this hourly limit is through PM CEMS. Protestants point out that the permit requires CEMS for other pollutants, and assert there is no legitimate justification to not require it for PM.

Moreover, Protestants note that the most recent permit in the RBLC database considered by the ED—the VEPCO VCHEC permit—requires PM CEMS.²⁰⁷ And, the EPA recommended that the TCEQ consider PM CEMS for this permit, when it provided its comments to the draft permit in this case.²⁰⁸ Even the ED has admitted that PM CEMS is preferable to continuous opacity monitoring systems (COMS), with approximately the same capital and operating costs as COMS.²⁰⁹ Because LBEC has already represented that it intends to use COMS for monitoring PM,²¹⁰ Protestants urge that there is simply no logical justification to not require PM CEMS in lieu of COMS in this case.

LBEC responds that neither Texas nor federal law requires it to monitor PM emissions with a CEMS. There is no federal regulatory requirement in the PSD regulations or NSPS, or in any section of the TCEQ rules requiring the installation of PM CEMS. Moreover, the TCEQ's rules require that opacity be monitored and provide that opacity serves as a surrogate for PM

²⁰⁷ LBEC Ex. 21, at 7.

²⁰⁸ EDF Ex. 16, at 2.

²⁰⁹ LBEC Ex. 31, at 44; Tr. at 1793-1794.

²¹⁰ LBEC Ex. 1, at 78.

emissions.²¹¹ One way of measuring opacity is through the use of COMS, as LBEC proposes in this case.

LBEC argues that, although PM CEMS is a technology that is gaining acceptance, the regulations have not yet caught up to the technology. The TCEQ has not had the opportunity to fully evaluate the technology and determine the accuracy of the data from such systems, nor to revise its rules to account for PM CEMS. Recently, in the NRG case, the Commission declined to require PM CEMS for measuring PM on a coal-fired electric generating unit. Given the lack of regulations and verification of PM CEMS reliability by the TCEQ, and the Commission's recent refusal to require it, LBEC contends it should not be required in this case.

Ultimately, in light of the Commission's determination in the NRG case, the Commission's rules related to opacity measurement, and the absence of any TCEQ or EPA rule or regulation requiring PM CEMS, the ALJs conclude that PM CEMS is not *required* for the LBEC facility. Thus, any determination to require it is up to the sound discretion of the Commission.

As a practical matter, the ALJs find that the rationale for *not using* PM CEMS is tenuous, at best. Therefore, the ALJs would recommend that the Commission consider, as a matter of policy, the possibility of requiring PM CEMS in this or future permit applications. As the undisputed evidence indicates, PM CEMS is technologically and economically feasible. Moreover, it provides some greater benefits than COMS, in that it will allow actual monitoring of emissions rather than just opacity—and the permit's PM limits are framed in terms of emissions, not opacity. Even the ED's engineering expert testified that PM CEMS is a proven technology that costs similarly to COMS. As such, moving forward, the ALJs see little reason why PM CEMS should not be pursued. But, for purposes of analyzing the legal *requirements* applied to this case, the ALJs also do not find that there is any legal basis on which they could

²¹¹ 30 Tex. Admin. Code § 111.111; Tr. at 283; LBEC Ex. 31, at 44.

conclude that PM CEMS must be used by LBEC. Accordingly, absent a policy determination by the Commission, the ALJs cannot recommend that LBEC be required to install PM CEMS.

G. State Health Effects Review

The State Health Effects Review is to make sure that emissions from the source will not contravene the Texas Clean Air Act and will be protective of human health and the environment. Protestants raise the following issues of concern with the State Health Effects Review conducted in this case:

- Various constituents for which the Commission has established Effects Screening Levels (ESLs) were unaccounted for.
- LBEC failed to calculate or evaluate ground level concentrations (GLCs) of pollutants along the Tule Lake Channel, even though the channel provides unrestricted access to persons conducting business
- The cursory review of the emissions by the ED's toxicologist indicates that scant attention was paid to the health effects of the LBEC emissions on the people of Nueces County.
- The State Health Effects Review was based on modeling submitted by LBEC that, as noted above, is error-ridden and woefully deficient.

Each of these arguments is addressed below.

1. Unaccounted Constituents

Protestants urge that the Commission has set health-based ESLs for pet coke and limestone dust but failed to consider these contaminants in its State Health Effects Review. Similarly, the ED excluded consideration of carbon dioxide as a "simple asphyxiant." According to Protestants, the ED is required to either remove these matters from the ESLs listing or consider them in the State Health Effects Review, but ignoring them is not an option.

The ALJs agree with the ED and LBEC in that pet coke, limestone dust, and carbon dioxide may reasonably be excluded due to their extremely low potential for impact. As the ALJs understand it, part of the ESL process is to explore the potential for effects to occur as a result of exposure to concentrations of constituents in the air. ESLs are established for many hundreds, perhaps thousands, of constituents. After the ESL is set for some constituents, the ED determines the potential for effects from exposure is so low as to be *de minimis*-- a term used by the ALJs, not the ED—so no State Health Effects Review is required for them.²¹² The ALJs concur with this determination as to the specific contaminants in issue.

2. Tule Lake Channel (Corpus Christi Ship Channel)

TCEQ guidance defines the following:

Industrial receptor: A receptor relating to the manufacturing of products or handling of raw materials or finished products without any associated retail product sales on property.

Nonindustrial receptor: A receptor type such as residential, recreational, commercial, business, agricultural, or a school, hospital, day-care center, or church. Other types include rights-of-way, waterways, or the like. In addition, receptors in unzoned or undeveloped areas are treated as nonindustrial. Nonindustrial receptors may also be referred to as sensitive.

According to LBEC, receptors were placed along the southern property line and beyond, but not on the portion of the Tule Lake Channel that is within the LBEC property. LBEC justifies this action by maintaining that the public will not have access to the portion of the channel inside the LBEC property, reasoning this portion is not ambient air. Receptors were

²¹² LBEC notes that this approach is specifically indicated in Commission guidance found at TCEQ, List of Chemicals Under consideration for ESL Development, at http://www.tceq.state.tx.us/implementation/tox/esl/develop_list.html (last accessed on March 16, 2010), where the guidance states: “[T]hese types of PM (^{a,b,c,d,e,f,g}) are generally considered non- to low-toxic nuisance dusts and do not require an effects review. An evaluation of these compounds will be conducted to determine whether a chemical-specific DSD should be developed for them or whether emissions of these PM constituents should only be evaluated using the NAAQS for PM₁₀.” Both pet coke and limestone dusts are included in this guidance.

located in the channel for portions owned by the POCCA.²¹³ LBEC insists that in prior permitting events, these receptors have been considered industrial for the State Health Effects Review.²¹⁴

Protestants point out that “waterways” are included in the definition of non-industrial receptor and that the ship channel is obviously a waterway. Moreover, Maria Remmert, toxicologist, testified that the ship channel receptors should be calculated as non-industrial receptors because members of the public who conduct business in the vicinity of the channel may have access.²¹⁵ She acknowledged that, if members of the public were excluded from the waterway, then she might agree with LBEC. But since there is no fence or other barrier to the public access to the waterway, Dr. Remmert opined that non-industrial receptors should have been included. This is true even for the portions of the channel that are inside LBEC’s property line. In support of her determination, Dr. Remmert cites to EPA guidance which states, “[I]n cases where the public has access, receptors should be located on the applicant’s property.”²¹⁶

After reviewing the applicable regulations and evidence, it appears to the ALJs that the Tule Lake Channel is an industrial waterway. As such, the ALJs find LBEC’s inclusion of industrial receptors is appropriate. The ALJs find no evidence of members of the public visiting the channel for recreational or retail reasons. Accordingly, while “waterways” is included in the definition of non-industrial receptors, the ALJs do not find this to be determinative for each and every waterway in the state. Rather, the more specific definitions applied to land should also be

²¹³ See *Texas Parks and Wildlife Department v. Champlin Petroleum Company and Nueces County Navigation District No. 1*, 616 S.W.2d 668 (Tex. App.-- Corpus Crhisti [13th Dist.] 1981, writ ref’d n.r.e.), finding that the State of Texas conferred to the district, now POCCA, a fee simple interest in submerged state lands.

²¹⁴ LBEC cites to correspondence from the ED concerning impacts from POCCA on May 2, 2003, for the proposition that the receptors are industrial. However, the ALJs are unable to find such a determination in that correspondence. See LBEC Ex. 7, at 216-218.

²¹⁵ EDF Ex. 200, at 10.

²¹⁶ EDF Ex. 200, at 11 citing EPA New Source review Workshop Manual (1990), at C.42.

equally applied to waterways such that waterways with industrial uses only should include only industrial receptors.

3. Cursory Review by ED

Protestants argue that the evidence suggest less than one-half day was spent on the health effects review by Dr. Jong-Song Lee, toxicologist. Protestants point to the testimony of numerous physicians in the Corpus Christi area who are fearful of the potential health effects people in Corpus Christi may already be experiencing from air pollution. Given the large number of people who live near the facility, Protestants desire a more thorough review and find the ED's cursory review to be inappropriate.

Noting that all but one of the twenty-four non-criteria pollutants subject to review were below their respective ESLs, the ED insists that Protestants concerns are without merit. For these pollutants, only a tier-one review was needed and it ended with a finding of no ESL exceedance. Even the one pollutant for which an exceedance was found, vanadium, was quickly determined by Dr. Lee to be acceptable. Give his over 20 years of toxicology review experience; Dr. Lee concluded that the vanadium emissions would not be expected to cause adverse health or welfare effects or odor nuisance for the public.

The ALJs find nothing in the applicable regulations suggesting a certain amount of time must be spent on the health effects review. Absent Protestants pointing to specific deficiencies in the health effects review—which are addressed elsewhere in the PFD—there is no basis for discounting Dr. Lee's testimony for the length of his review.

4. Inadequate Modeling Results In An Inadequate Health Effects Review

OPIC argues that because Applicant's modeling is flawed, its Health Effects Review is also flawed. Without proper accounting for the full extent of potential emissions through the

modeling, OPIC insist that LBEC has failed to meet its burden of proof regarding adverse health and environmental impacts. Protestants agree with this determination.

Applicant disagrees that its modeling is flawed so it finds no reason to discount the health effects review.

The ALJs concerns with the modeling pertain primarily to the federally delegated PSD program and the inclusion of secondary sources and all actual emissions for determination of the increment. The ALJs do not understand that their previous recommendations ring true for the state modeling, if that were all that was required. For this reason, the ALJs do not find it necessary to perform an additional health effects review. However, if the additional modeling reveals any areas of concern, the ED can always require additional consideration of the health effects review.

V. TRANSCRIPT COSTS

In accordance with Commission rules, the ALJs required a transcript be prepared in this case because the hearing was scheduled to last longer than one day.²¹⁷ LBEC paid the transcription costs, subject to allocation of them at the conclusion of the hearing. Total transcript costs paid by LBEC were \$35,830.54. LBEC seeks to allocate these costs equally among itself and seven protesting parties, for an allocation of \$4,478.81 each. Protestants request that the Commission assess all transcript costs to LBEC. After considering the factors set out in the TCEQ's rules, the ALJs recommend that the Commission require Protestants Sierra Club, EDF, and CACC to each reimburse LBEC transcript costs in the amount of \$2,833. All other transcript costs, amounting to \$27,330.54 according to LBEC's evidence, should be borne by LBEC.

²¹⁷ 30 TEX. ADMIN. CODE § 80.23(b)(4).

The Commission's rules at 30 TEX. ADMIN. CODE § 80.23(d) list the factors to be considered in assessing reporting and transcription costs. The factors relevant to this case include the following, along with the ALJs' analysis of each factor as applied to the facts of this case:

- (A) "The party who requested the transcript." The ALJs ordered the transcript.
- (B) "The financial ability of the party to pay costs." With the exception of EDF, Sierra Club, and CACC, the other Protestants are generally groups of individuals or small non-profit organizations with a lesser likely financial ability to pay costs.²¹⁸ LBEC is a for-profit corporate entity and likely has the greatest financial ability to pay costs.
- (C) "The extent to which the party participated in the hearing." Combined, LBEC, Sierra Club, EDF, and CACC accounted for the bulk of the hearing time—with Sierra Club and LBEC accounting for the most time. The ALJs find that the questioning of witnesses by the parties was generally to the point and directed toward relevant issues. The ALJs find that the extent of participation by all parties was appropriate and that none of the parties unduly burdened the transcript with frivolous arguments or unnecessary questioning of witnesses.
- (D) "The relative benefits to the various parties of having a transcript." As the party bearing the burden of proof, LBEC could anticipate the greatest potential benefit from an ability to cite and reassemble the information within the record, although all parties benefitted from having a transcript. LBEC is the party that initially requested that an expedited transcript be available during the hearing, thus showing it expected to receive a great benefit from the transcript.

²¹⁸ The "Medical Group" consists of some medical societies as well as doctors. Thus, some of the members of the group would likely have the resources to pay transcript costs, but others might not.

- (E) “The budgetary constraints of a state or federal administrative agency participating in the proceeding.” This factor is generally not relevant, as TCEQ rules preclude the Commission from assessing costs against parties that cannot appeal a Commission decision—namely the ED and OPIC. *See* 30 TEX. ADMIN CODE § 80.23(d)(2).
- (F) This factor is inapplicable.
- (G) “Any other factor which is relevant to a just and reasonable assessment of costs.” The ALJs find that all parties had plausible, good-faith arguments for the issues they raised.

In looking at these factors, it appears that transcript costs could reasonably be assessed against LBEC, Sierra Club, EDF, and CACC, as parties with the resources to pay costs and who actively participated in the hearing. However, the transcript costs for this case appear excessive, most likely because of the request by LBEC for next-day delivery. For example, non-expedited transcript costs in the NRG matter were \$6,974.75 for a 5-day hearing. Even doubling the costs (to account for the 9-day hearing in this case) and adding another \$300 per day for travel and lodging expenses for court reporters,²¹⁹ the total would still be less than \$17,000. This is less than half what LBEC claims for transcription costs in this case.

As the party who initially requested next-day service, LBEC should be responsible for the costs associated with it. But, LBEC has provided no basis for determining the portion of costs associated with next-day services. As the party paying for transcription services and seeking reimbursement, LBEC has the burden of establishing its entitlement to reimbursement. Without a proper accounting and breakdown of the transcription costs, LBEC has failed to provide a sufficient basis for allocating costs in the manner suggested by LBEC.

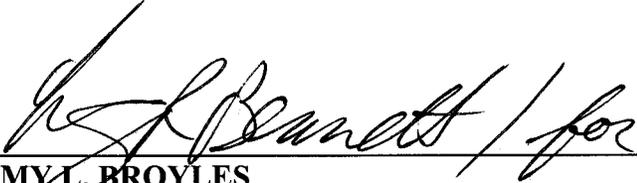
²¹⁹ This is a rough approximation of what one might expect costs to be for two court reporters per day.

However, it is clear that Protestants should bear some portion of the transcription costs, as they participated actively in the hearing, benefited from the transcript, and—at least as to some of the Protestants—have the financial ability to pay for some portion of the costs. Accordingly, the ALJs find it appropriate to take the reasonable amount transcript costs should be, but for the next-day service requested by LBEC, and attribute half of that to Protestants. Concluding that \$17,000 would be a fair estimation of transcript costs for a 9-day hearing, half of that is \$8,500. Protestants Sierra Club, EDF, and CACC should bear this cost equally—namely \$2,833 each—and should reimburse LBEC this amount. All other transcript costs, totaling \$27,330.54 according to LBEC’s evidence, should be borne by LBEC.

VI. CONCLUSION

In conclusion, the ALJs find that LBEC has failed to meet its burden of proof on a number of required issues. Among other things, numerous aspects of LBEC’s air modeling were simply inadequate and provide insufficient assurance that the permits, if issued, would comply with all applicable air quality standards and be protective of human health and the environment. Further, LBEC has failed to conduct a MACT analysis that the ALJs believe is required by law. Given these failures, the ALJs conclude that the permits sought by LBEC may not issue at this time.

SIGNED March 29, 2010.



TOMMY L. BROYLES
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS



CRAIG R. BENNETT
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS