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July 23, 2009

BY HAND DELIVERY

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Re: TCEQ Docket No. 2007-1820-AIR and 2008-1210-AIR; Consolidated SOAH Docket No. 582-08-0861; *Application of NRG Texas Power LLC for State Air Quality Permit 79188 and Prevention of Significant Deterioration Permit PSD-TX-1072 and Hazardous Air Pollutant Major Source [FCAA § 112(g)] Permit HAP-14*

Dear Ms. Castañuela:

Enclosed for filing in the above-referenced proceeding please find an original and eight copies of Applicant NRG Texas Power LLC's Reply to Exceptions.

Please file the original document in the above-referenced proceeding and return a file-stamped copy to me via the courier. By my signature below, I certify that a copy of this filing has been served on Judge Bennett and Judge Broyles and the parties to this matter as indicated below.

If you have any questions concerning this filing, please do not hesitate to contact me at the number above.

Sincerely,



Derek R. McDonald

Enclosures

cc: *(With Enclosure)*  
The Honorable Craig R. Bennett (via Hand Delivery)  
The Honorable Tommy L. Broyles (via Hand Delivery)  
Garrett Arthur (via Hand Delivery and Electronic Mail)  
Booker Harrison (via Hand Delivery and Electronic Mail)  
James Blackburn, Jr. and Charles Levine (via U.S. Mail and Electronic Mail)  
Wendi Hammond (via U.S. Mail and Electronic Mail)  
Ilan M. Levin and Layla Mansuri (via U.S. Mail and Electronic Mail)  
Charles E. Morgan (via U.S. Mail and Electronic Mail)  
John M. Quinlan (via U.S. Mail and Electronic Mail)

**CONSOLIDATED SOAH DOCKET NO. 582-08-0861  
TCEQ DOCKET NO. 2007-1820-AIR AND 2008-1210-AIR**

<b>APPLICATION OF NRG TEXAS</b>	<b>§</b>	<b>BEFORE THE TEXAS COMMISSION</b>
<b>POWER LLC FOR STATE AIR</b>	<b>§</b>	
<b>QUALITY PERMIT 79188 AND</b>	<b>§</b>	
<b>PREVENTION OF SIGNIFICANT</b>	<b>§</b>	
<b>DETERIORATION AIR QUALITY</b>	<b>§</b>	<b>ON</b>
<b>PERMIT PSD-TX-1072 AND</b>	<b>§</b>	
<b>HAZARDOUS AIR POLLUTANT</b>	<b>§</b>	
<b>MAJOR SOURCE [FCAA § 112(g)]</b>	<b>§</b>	
<b>PERMIT HAP-14</b>	<b>§</b>	<b>ENVIRONMENTAL QUALITY</b>

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**APPLICANT NRG TEXAS POWER LLC'S  
REPLY TO EXCEPTIONS**

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**TABLE OF CONTENTS**

I. The State Air Quality/PSD Permit establishes appropriate BACT emission limits. .... 1

    A. NRG’s BACT analysis and the Executive Director’s BACT determination for Limestone Unit 3 satisfied applicable requirements. .... 2

        1. The ALJs correctly concluded that NRG’s BACT analysis accounted for new technical developments. .... 2

        2. The ALJs’ proposed findings regarding TCEQ BACT guidance are proper. .... 5

        3. The State Air Quality/PSD Permit SO<sub>2</sub> emission limit is BACT. .... 5

        4. The State Air Quality/PSD Permit NO<sub>x</sub> emission limit is BACT. .... 6

        5. The State Air Quality/PSD Permit CO emission limit is BACT. .... 8

    B. The ALJs correctly found that greenhouse gases and carbon dioxide are not subject to regulation under the TCAA or FCAA. .... 8

    C. The ALJs properly applied the PM<sub>10</sub> surrogate policy. .... 10

    D. The ALJs properly concluded that BACT does not require redesign of the Limestone 3 project based on cleaner fuels. .... 11

II. The Limestone Unit 3 project will be protective of the public’s health and welfare and physical property. .... 14

    A. The ALJs’ finding regarding the scope of the required modeling is proper. .... 14

    B. The ALJs correctly concluded that on-site preconstruction air quality monitoring is unnecessary. .... 15

    C. Sierra Club’s proposed findings regarding model selection are unnecessary. .... 16

    D. NRG conducted its modeling properly and in accordance with TCEQ and EPA policies. .... 16

    E. The ALJs correctly concluded that 5 µg/m<sup>3</sup> is the proper significance level for a 24-hour PM<sub>10</sub> PSD increment modeling demonstration. .... 18

    F. The ALJs correctly concluded that NRG employed appropriate background and retrieval source data in performing the dispersion modeling. .... 19

G. The ALJs were correct in approving NRG’s use of longstanding TCEQ policy regarding the modeling of haul road emissions and low-level fugitive sources. .... 21

    1. Haul Road Emissions..... 21

    2. Low-Level Fugitive Sources..... 22

H. The ALJs correctly approved of NRG’s use of the meteorological data supplied by the Executive Director..... 23

I. Sierra Club’s exceptions ignore the Executive Director’s technical review of NRG’s State Air Quality/PSD Application. .... 25

III. The ALJs correctly found that the Limestone Unit 3 project will not measurably cause or contribute to an exceedance of the ozone NAAQS. ....25

IV. A remand of the MACT Application elevates form over substance.....27

V. The draft permits will ensure compliance with the PM emission limits governing Limestone Unit 3.....28

VI. Conclusion .....29

Applicant NRG Texas Power LLC (“NRG” or “Applicant”) submits the following Reply to Exceptions to the Proposal for Decision and Order of the State Office of Administrative Hearings (“SOAH”) in the above-captioned matter. For the reasons set forth below, NRG respectfully requests that the Texas Commission on Environmental Quality (“TCEQ” or “Commission”) overrule the exceptions filed by protestants Sierra Club, Robertson County: Our Land, Our Lives (“RCOLOL”), Citizens for Environmental Cleanup (“CEC”) and Douglas W. Ray<sup>1</sup> and adopt the Administrative Law Judges’ (“ALJs”) proposed approval of NRG’s application for State Air Quality Permit No. 79188/Prevention of Significant Deterioration (“PSD”) Permit No. PSD-TX-1072 (the “State Air Quality/PSD Application”) and State Air Quality Permit No. 79188/PSD Permit No. PSD-TX-1072 (the “State Air Quality/PSD Permit”).

NRG further requests that, for the reasons set forth below and in Applicant’s Exceptions to the Proposal for Decision and Order, the Commission grant NRG’s exceptions to the proposal for decision (“PFD”) regarding NRG’s application for a case-by-case maximum achievable control technology (“MACT”) determination for the Limestone Unit 3 project and adopt an order approving NRG’s application for Hazardous Air Pollutant Major Source [FCAA § 112(g)] Permit No. HAP-14 (the “MACT Application”) and issuing Permit No. HAP-14 (the “MACT Permit”).

NRG’s Reply to Exceptions will address the protestants’ exceptions in the order that the ALJs address the issues in the PFD. NRG also incorporates by reference its Closing Brief and Brief in Reply to Closing Arguments, in the event that the Commissioners are interested in more of the overwhelming evidence in the record that supports NRG’s applications for the State Air Quality/PSD Permit and MACT Permit.

**I. The State Air Quality/PSD Permit establishes appropriate BACT emission limits.**

The ALJs concluded that the TCEQ’s three-tier best available control technology (“BACT”) methodology is the proper method for analyzing BACT in this case. PFD at 24. While the ALJs recommend changes to the BACT emission limits established by the Executive Director for total PM/PM<sub>10</sub>, NO<sub>x</sub> and CO, the ALJs found that the BACT analysis for Limestone Unit 3 “satisfies the applicable requirements in statute and rule” and that NRG properly

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<sup>1</sup> Protestant Douglas W. Ray filed exceptions that merely adopt the exceptions filed by Sierra Club and RCOLOL.

considered new technologies in proposing the BACT emission limits for Limestone Unit 3. PFD at 48, 27. The record supports the ALJs' conclusions regarding the proper methodology for a BACT demonstration in Texas and NRG's adherence to that methodology. The ALJs' proposal to apply more-stringent emission limits that exceed BACT requirements for three pollutants does not affect this conclusion.

**A. NRG's BACT analysis and the Executive Director's BACT determination for Limestone Unit 3 satisfied applicable requirements.**

**1. The ALJs correctly concluded that NRG's BACT analysis accounted for new technical developments.**

The State Air Quality/PSD Application includes a Tier I BACT analysis for Limestone Unit 3. Applicant's Ex. 49 at 6:18 - 7:7 (W. Frazier). Tier I of the BACT analysis involves an evaluation of the emission reduction performance levels accepted as BACT in recent permit reviews. In a Tier I BACT analysis, emission reduction performance levels approved as BACT in recent permit reviews for the same process and/or industry are acceptable as BACT, if no new technical developments have been made that indicate that additional emission reductions are economically or technically reasonable. Applicant's Ex. 49 at 10:1-23 (W. Frazier); *see also* Applicant's Ex. 31 (TCEQ BACT Guidance); Executive Director's Ex. ED-1 at 9:9-19 (J. Linville).

Sierra Club excepts to the ALJs' conclusions regarding the Limestone Unit 3 BACT determination by offering a long list of proposed findings previously rejected by the ALJs. Sierra Club's Exceptions at 21-24. Central to Sierra Club's argument is the erroneous position that NRG did not consider new technical developments in the BACT analysis. To the contrary, NRG considered new technical developments in proposing, and the Executive Director considered new technical developments in evaluating, BACT for Limestone Unit 3. Sierra Club's exceptions should be overruled.

NRG performed two BACT analyses for the State Air Quality/PSD Application. NRG included a BACT analysis in the initial June 2006 State Air Quality/PSD Application submittal. Applicant's Ex. 6 at NRG00042-NRG000063 (State Air Quality/PSD Permit Application). One year later, during the Executive Director's technical review of the application, NRG provided an updated BACT analysis that considered permits issued as late as May 2007.

Applicant's Ex. 6 at NRG00587-NRG000632 (State Air Quality/PSD Permit Application). As part of that analysis, NRG assessed whether "any new information has been presented since the preparation of the original BACT analysis that would change the selection of control technology for any pollutant." Applicant's Ex. 6 at NRG000594 (State Air Quality/PSD Permit Application). NRG's careful consideration of the most recently issued permits, pending permit applications and draft permits, along with a review for technology improvements, established BACT through the Tier I review. Permitting activity for coal-fired power plants has been high, both in Texas and nationally. Advances in technology would be captured by recently-issued permits and reflected in the permits and permit applications reviewed by NRG as part of the Tier I BACT review.

The testimony in the record regarding the consideration of new technological developments as part of NRG's BACT analysis is clear. John Klumpyan is NRG's Director of Air Quality Control Systems Programs. When asked whether there are technical developments that offer the potential for further emission reductions from Limestone Unit 3 that are both technically practicable and economically reasonable, Mr. Klumpyan answered "No." Applicant's Ex. 24 at 19:27-31 (J. Klumpyan). Mr. Klumpyan is uniquely positioned to be aware of such developments. As he explained,

I am presently working with several engineering firms and equipment suppliers to evaluate control technologies for implementation at several other NRG facilities. Additionally, I receive and read industry publications such as Power Engineering, Electric Light and Power, and Coal Power, which regularly provide technology updates on existing controls and cover developments for new and emerging technologies. I also routinely participate in industry conferences, such as PowerGen and CoalGen and recently co-authored several papers on emission control technology implementation that were presented at the 2008 PowerGen conference in December.

Applicant's Ex. 24 at 20:20-27 (J. Klumpyan).

TCEQ air permitting staff independently reached the conclusion that there were no new developments that made further reductions technically practicable and economically reasonable. The permit engineer for the State Air Quality/PSD Permit and MACT Permit, Jim Linville, testified:

Q. Please describe the BACT analysis conducted for the NRG Limestone 3 proposed permit

A. NRG proposed BACT based upon a Tier-1 BACT analysis. \* \* \* In its evaluation of the NRG Limestone 3 application, the Air Permits Division (APD) staff reviewed information within the application, including lists, specifically the RBLC, which summarize recent PC boiler permit emission limits to identify proposed BACT technologies and emission limits, and APD staff followed air pollution technology development for coal combustion through attendance at workshops and conferences, interaction with vendor experts, state and federal regulators, plant tours, etc.

Q. Were BACT limits established for all of the applicable emissions?

A. Yes.

Executive Director's Ex. ED-1 at 10:21-38 (J. Linville) (emphasis added). As the ALJs point out, the protestants in this matter did not identify new control technologies that they contend should be used at Limestone Unit 3, and Sierra Club's witness Dr. Ron Sahu conceded that the suite of control devices proposed for Limestone Unit 3 has the potential to be the top emissions control technologies for the control of NO<sub>x</sub>, SO<sub>2</sub> and PM. PFD at 26 (citing 3 Tr. 656:7 - 657:22 (R. Sahu)). The record supports the ALJs' conclusion that new technologies were appropriately considered in the Tier I BACT analysis for Limestone Unit 3.

Sierra Club also excepts to Finding of Fact No. 237 and proposes changes to the ALJs' finding as part of its general BACT exceptions. Sierra Club's Exceptions at 27.<sup>2</sup> Sierra Club's exception should be overruled. Sierra Club's proposed changes to Finding of Fact No. 237 are wholly unnecessary. NRG's Tier I BACT proposal was based on the lowest permitted emission rates of similar sources. The fact that NRG did not present vendor information to the Executive Director as part of its BACT analysis does not undermine the validity of the analysis in the least. Like any applicant, NRG had no obligation to provide extraneous information that did not serve as a basis for the BACT proposal as part of the State Air Quality/PSD Application.

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<sup>2</sup> Sierra Club proposes the following changes to Finding of Fact No. 237: "In addition to looking at the permits for these other facilities, NRG states that it considered information from vendors and engineering experts on the most realistic emission rates available with BACT, but did not present any of vendor information as evidence to the record or to the Executive Director."

**2. The ALJs' proposed findings regarding TCEQ BACT guidance are proper.**

Sierra Club also excepts to proposed Findings of Fact Nos. 234 and 235, "to the extent that each imply that TCEQ has a formal SIP-approved guidance document on BACT." Sierra Club's Exceptions at 27. Sierra Club's exception has no merit. Neither of the referenced findings imply SIP approval; moreover, there is no requirement that a state's permitting guidance documents be approved as part of the SIP. The Commission should adopt Findings of Fact Nos. 234 and 235 as proposed by the ALJs.

**3. The State Air Quality/PSD Permit SO<sub>2</sub> emission limit is BACT.**

The record in this matter supports the ALJs' determination that the State Air Quality/PSD Permit SO<sub>2</sub> emission limits of 0.06 lb/MMBtu (annual average) and 0.10 lb/MMBtu (30-day rolling average) represent BACT.

The SO<sub>2</sub> BACT determination is based on use of the top technology for the control of SO<sub>2</sub> emissions, wet flue gas desulfurization ("wet FGD"), and the lowest annual emission limitation of recently permitted pulverized coal-fired boilers. Applicant's Ex. 49 at 25:24-26:10 (W. Frazier); Applicant's Ex. 53 at Tables WFF-2a & WFF-2b (BACT Comparison Tables); Applicant's Ex. 12 at 25 (Executive Director's Response to Public Comments, State Air Quality/PSD Permit). The BACT emissions limitation for SO<sub>2</sub> corresponds to a control efficiency for the wet FGD system for Limestone Unit 3 of between 95 and 98.4 percent, depending on the particular sulfur concentration of the fuel or fuels blends being fired. 3 Tr. 679:7-10; 679:23-680:3 (R. Sahu). This range of control efficiencies represents BACT.

Contrary to Sierra Club's assertion, the evidence in the record does not support that either lower emissions limitations or greater control efficiencies are achievable for Limestone Unit 3. NRG's witnesses explained how the limits established for Limestone Unit 3 represent what is achievable, considering vendor guarantees that reflect the practical lower limit for emissions limitations and maximum control efficiencies that can be expected when combusting low-sulfur fuels. 1 Tr. 128:21-133:17 (J. Klumphyan); 2 Tr. 400:4-403:5; 436:10-437:15 (W. Frazier); 5 Tr. 1223:12-1224 (C. Campbell). While Sierra Club's witness Dr. Sahu argues for a more-stringent SO<sub>2</sub> control efficiency, Dr. Sahu (1) was unable to identify any plant with a lower numerical emissions limitation than that proposed for Limestone Unit 3, (2) could

not identify a BACT determination that requires the higher level of control that he believes may be achievable, and (3) could not give one example of a unit meeting that level of control over any long-term period. 3 Tr. 674:25-679:6 (R. Sahu).

The ALJs reached their conclusion regarding BACT for SO<sub>2</sub> based on the information provided by NRG in support of its proposed BACT emission rates, as well as the absence of evidence that a source similar to Limestone Unit 3 has achieved the control efficiencies proposed by Dr. Sahu for an extended period, finding that “it is not appropriate to set the BACT limit at essentially the highest control level recorded with no margin of fluctuation or error over time.” PFD at 32-33. Sierra Club excepts to the ALJs’ conclusion, arguing that the ALJs have shifted the burden away from NRG and onto the protestants. Sierra Club’s Exceptions at 20. This is untrue; no burden has shifted from NRG. While NRG has the burden to demonstrate that Limestone Unit 3 will employ BACT, NRG does not have the burden to disprove every claim or allegation made by a protestant. NRG met its burden by presenting persuasive evidence in the State Air Quality/PSD Application and at the hearing on the merits that the emission limits for SO<sub>2</sub> represent BACT. Sierra Club’s exception with respect to the SO<sub>2</sub> BACT emission limits should be overruled.

**4. The State Air Quality/PSD Permit NO<sub>x</sub> emission limit is BACT.**

The record in this matter supports the Executive Director’s conclusion that the State Air Quality/PSD Permit NO<sub>x</sub> emission limits of 0.05 lb/MMBtu (annual average) and 0.07 lb/MMBtu (30-day rolling average) represent BACT. The ALJs propose a more-stringent 30-day rolling average NO<sub>x</sub> limit of 0.06 lb/MMBtu as BACT. PFD at 38. As NRG stated in its Exceptions to the Proposed Decision and Order, while the ALJs’ proposal represents a beyond-BACT emission limit for NO<sub>x</sub>, NRG has committed to operate the state-of-the art emissions controls for Limestone Unit 3 in a manner that will achieve this more-stringent emission limit.

Sierra Club excepts to the ALJs’ proposed BACT emission rates for NO<sub>x</sub>, arguing that NRG and the ED have overestimated the boiler outlet NO<sub>x</sub> emission rate and underestimated the control efficiency that will be achieved by the SCR. Sierra Club’s Exceptions at 24-26. The ALJs correctly declined to adopt Sierra Club’s reasoning in evaluating NO<sub>x</sub> BACT. NRG presented testimony at the hearing that Sierra Club’s mathematically derived NO<sub>x</sub> BACT limit

has not been achieved at any similar source, and is not a proper way to establish a BACT that a source must achieve for the lifetime of the unit. NRG's witness Colin Campbell testified:

Q. So would you continue on, Mr. Campbell, as to whether you think a limit as low as .02 pounds per million Btu for NO<sub>x</sub> is achievable.

A. I do not think it's achievable. I'm not aware of any operating coal-fired power plant that is achieving sustained operation at rates even approaching as low as .02 pounds per million Btu heat input. And to the extent that one can arrive at that limit through a mathematical exercise, evaluating what is achievable through a highly-performing boiler and then applying some hypothetical control efficiency for an SCR system. I don't think that's appropriate as a way to establish — for the agency to establish a BACT emission limit.

Q. And why not?

A. Because the exercise is hypothetical. From an engineering and chemistry standpoint, the application of a hypothetical control efficiency for what a control device might be designed to achieve in some installations, and the application of that control efficiency to an instance like this where the NO<sub>x</sub> level coming out of the boiler is relatively low already, these are rate-limited reactions and the rate-limited chemical reactions and the same control efficiency is not achievable across the board at all inlet concentrations.

5 Tr. 1222:4-1223:4 (C. Campbell). The Executive Director concurred: “[t]he BACT proposed by Sierra Club, based on a 90 percent reduction in the SCR, reflects data that has been achieved but not demonstrated over the life of the catalyst and does not account for known problems with ash deposition and catalyst plugging, and has not been required in any existing permits.” Applicant’s Ex. 12 at 27 (Executive Director’s Response to Public Comments, State Air Quality/PSD Permit). Mr. Linville testified that “to pick a number like the 90 percent removal on an SCR and say that can be done across the board in every case is, I think, a little bit — going beyond what I would accept to be achievable.” 4 Tr. 897:22-25 (J. Linville).

As the ALJs point out, neither Sierra Club nor its witness can identify a facility that has achieved the NO<sub>x</sub> emission limits that it argues are BACT. PFD at 36. Sierra Club’s exceptions regarding the BACT emission limits for NO<sub>x</sub> should be overruled.

**5. The State Air Quality/PSD Permit CO emission limit is BACT.**

The record in this matter supports the Executive Director's conclusion that the State Air Quality/PSD Permit CO emission limit of 0.15 lb/MMBtu (30-day rolling average) represents BACT. The ALJs propose a more-stringent 30-day rolling average CO limit of 0.12 lb/MMBtu as BACT. PFD at 40. While the ALJs' proposal represents a beyond-BACT emission limit for CO, NRG has committed to operate the state-of-the art emissions controls at Limestone Unit 3 in a matter that will achieve this more-stringent emission limit.

As with SO<sub>2</sub> and NO<sub>x</sub>, Sierra Club excepts to the ALJs' BACT determination for CO by re-urging its list of proposed findings regarding CO BACT. Sierra Club's Exceptions at 26-27. Sierra Club's exceptions lack clarity on this point, and ignore the fact that the ALJs have proposed a more-stringent CO BACT limit. Moreover, Sierra Club's exceptions fail to propose an alternative CO BACT limit to that recommended by the ALJs. Sierra Club's exceptions regarding the BACT emission limit for CO should be overruled.

**B. The ALJs correctly found that greenhouse gases and carbon dioxide are not subject to regulation under the TCAA or FCAA.**

The ALJs properly excluded evidence regarding carbon dioxide ("CO<sub>2</sub>") and greenhouse gases ("GHGs") in this matter and correctly found that CO<sub>2</sub> is not subject to regulation under the Texas Clean Air Act ("TCAA") or federal Clean Air Act ("FCAA").

As the ALJs stated in ruling to exclude CO<sub>2</sub> evidence, the Commission has consistently declined the *ad hoc* regulation of CO<sub>2</sub> through the state preconstruction or PSD permitting programs. *See, e.g.*, Applicant's Ex. 85 at 36 (*Sandy Creek* Final Order). The Commission has not subjected GHGs to regulation under the preconstruction permitting requirements of the TCAA. Likewise, CO<sub>2</sub> is not currently subject to regulation under the FCAA and remains beyond the scope of PSD review. In the July 30, 2008 advance notice of proposed rulemaking ("ANPR") on GHG regulation, EPA stated that "CO<sub>2</sub> is not a regulated pollutant under the [FCAA]" and discussed GHGs in terms of potential future regulations. 73 *Fed. Reg.* 44400, 44397-44400 (July 30, 2008) (ANPR: Regulating Greenhouse Gas Emissions Under the Clean Air Act). In November 2008, EPA's Environmental Appeals Board ("EAB") ruled that EPA had discretion to determine what is considered a pollutant "subject to regulation" under the FCAA, and that EPA had discretion not to include CO<sub>2</sub> limits in PSD permits. *In the*

*Matter of Deseret Power Electric Coop.*, EAB App. No. PSD 07-03 (Nov. 13, 2008) (“*In re Deseret*”).

In response to the EAB’s *In re Deseret* decision, former EPA Administrator Johnson issued a memorandum in December 2008 affirming that CO<sub>2</sub> is not currently “subject to regulation” under the FCAA, and that EPA does not regulate CO<sub>2</sub> in the PSD permitting program. See Memorandum from Stephen L. Johnson, Administrator, EPA to Regional Administrators at 6-7 (Dec. 18, 2008) (“Johnson Memorandum”). It remains current EPA policy that CO<sub>2</sub> is not regulated under the PSD permitting program.

Sierra Club cites EPA’s April 2009 proposed endangerment finding in support of its exceptions regarding CO<sub>2</sub> and GHGs. That proposal, however, did not (and will not) affect the status of GHGs with regard to the PSD program. In the proposed endangerment finding, EPA stated:

At this time, a final positive endangerment finding would not make the air pollutant found to cause or contribute to air pollution that endangers a regulated pollutant under the CAA’s Prevention of Significant Deterioration (PSD) program. See memorandum entitled “EPA’s Interpretation of Regulations that Determine Pollutants Covered By Federal Prevention of Significant Deterioration (PSD) Permit Program” (Dec. 18, 2008). EPA is reconsidering this memorandum and will be seeking public comment on the issues raised in it. That proceeding, not this rulemaking, would be the appropriate venue for submitting comments on whether a final, positive endangerment finding under section 202(a) of the Act should trigger the PSD program, and the implications of the definition of air pollutant in that endangerment finding on the PSD program.

74. *Fed. Reg.* 18885, 18905 (Apr. 24, 2009) (Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act; Proposed Rule) (emphasis added).

More recently, EPA again confirmed that GHGs are not currently subject to regulation under the PSD program. On July 8, 2009, EPA published in the *Federal Register* its decision to grant the State of California’s request for a preemption waiver under Section 209 of the FCAA to regulate GHG emissions from motor vehicles. 74 *Fed. Reg.* 32743 (July 8, 2009). In response to a question about the impact that granting the California waiver would have on

PSD requirements for GHGs, EPA stated, “EPA agrees that these issues are not relevant to the waiver decision criteria, and are most appropriately addressed in a separate forum. EPA is not addressing these issues in today’s decision.” 74 *Fed. Reg.* at 32783.

NRG does not object to Sierra Club’s suggestion that Findings of Fact Nos. 224, 225 and 227 be restated as Conclusions of Law. The Commission should make clear in the final order, however, that CO<sub>2</sub> and GHGs are not currently regulated under the TCAA or FCAA.

**C. The ALJs properly applied the PM<sub>10</sub> surrogate policy.**

The Judges properly applied the PM<sub>10</sub> surrogate policy in concluding that “there is no current requirement in place for a separate analysis of PM<sub>2.5</sub> in Texas.” PFD at 43-44.

Under the PM<sub>10</sub> surrogate policy, EPA and state permitting authorities allow applicants to demonstrate compliance with PM<sub>2.5</sub> requirements with a PM<sub>10</sub> compliance demonstration. Sierra Club excepts to proposed Finding of Fact No. 96, citing a June 2009 *Federal Register* notice in which EPA provided notice of its reconsideration of the May 16, 2008 PM<sub>2.5</sub> Implementation Rule. Sierra Club’s Exceptions at 9. The *Federal Register* notice, which references an April 24, 2009 EPA letter granting the petition for reconsideration,<sup>3</sup> issues an administrative stay of 40 CFR § 52.21(i)(1)(xi), the provision of the federal PSD rules regarding the continued use of the PM<sub>10</sub> surrogate policy. 74 *Fed. Reg.* 26098 (June 1, 2009).

While EPA granted an administrative stay of the federal PSD rules’ PM<sub>10</sub> surrogate provision, EPA’s recent action has not changed the PM<sub>10</sub> surrogate policy currently in effect in the State of Texas and other states with SIP-approved PSD programs. EPA Administrator Jackson states in the April 24 letter granting the petition for reconsideration:

The specific provisions of the May 16, 2008 rule for which you have requested EPA reconsideration include (1) the transition program and interim requirements for the prevention of significant deterioration (PSD) programs in SIP-approved states; (2) the grandfathering provision concerning the continued use of the PM<sub>10</sub> Surrogacy Policy in the federal PSD regulations at 40 CFR 52.21(i)(1)(xi); (3) the transition period for addressing condensable particulate matter emissions; and (4) the preferred interpollutant trading ratios under the nonattainment area NSR program.

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<sup>3</sup> A copy of the April 24, 2009 letter itself is available at: <http://www.epa.gov/nsr/documents/Earthjustice.pdf>.

Letter, Lisa P. Jackson, Administrator, U.S. EPA, to Paul Cort, Earthjustice (Apr. 24, 2009). The letter then states that EPA intends to propose the repeal of the federal grandfathering provision — Issue (2) — but that “[a]t this time, the Agency has not determined any specific action to be proposed concerning the other three issues raised in your petition.” *Id.* EPA has not proposed the repeal of the transition program for SIP-approved states, and the three-year program for Texas to transition from the PM<sub>10</sub> surrogate policy remains in effect.

Sierra Club’s exception and proposed revision to Finding of Fact No. 96 misrepresents the current status of the PM<sub>10</sub> surrogate policy in Texas. EPA currently accepts a demonstration of compliance with the PM<sub>10</sub> National Ambient Air Quality Standards (“NAAQS”) as a surrogate for compliance with the PM<sub>2.5</sub> NAAQS in Texas. Should the Commission determine that a change to that finding is merited, NRG proposes the following change to Finding of Fact No. 96:

~~Both EPA and TCEQ accepts demonstration of compliance with the PM<sub>10</sub> NAAQS as a surrogate for compliance with the PM<sub>2.5</sub> NAAQS, in accordance with EPA rules governing states with SIP-approved PSD programs.~~

Sierra Club also excepts to Finding of Fact No. 98.<sup>4</sup> The Commission should overrule Sierra Club’s exception to Finding of Fact No. 98; the basis for the PM<sub>2.5</sub> NAAQS demonstration of compliance is clear with Finding of Fact Nos. 96 and 98. No change to Finding of Fact No. 98 is merited.

**D. The ALJs properly concluded that BACT does not require redesign of the Limestone 3 project based on cleaner fuels.**

The record in this matter supports the ALJs’ determination that BACT does not require a redesign of the Limestone 3 project to mandate the use of cleaner fuels.

After evaluating the protestants’ clean fuels arguments and the evidence in the record regarding the fuels that NRG intends to fire in Limestone Unit 3, the ALJs concluded:

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<sup>4</sup> Sierra Club proposes the following changes to Finding of Fact No. 98: “The Limestone Station’s emissions, including the Limestone Unit 3 project emissions, of PM<sub>2.5</sub>, were evaluated under the surrogate policy. The determination that these emissions will not cause or contribute to an exceedance of the PM<sub>2.5</sub> NAAQS is based solely on the finding of fact that the project emissions will not cause or contribute to a violation of the PM<sub>10</sub> NAAQS.”

the ALJs do not believe that an applicant is required to consider different fuels or fuel blends, when the use of those fuels or fuel blends would change the nature of the project and its economic viability.

PFD at 48. RCOLOL argues that the ALJs' decision, which cites TCEQ precedent from the *Oak Grove* and *Sandy Creek* matters, is inconsistent with a court decision from the U.S. Court of Appeals for the 7th Circuit regarding an Illinois permit application. The record in this matter supports the ALJs' conclusion, which is consistent with Commission precedent on the subject.

Limestone Unit 3 is proposed to be fueled primarily with low-sulfur subbituminous coal. Applicant's Ex. 6 at NRG000001 (State Air Quality/PSD Application). The permit allows NRG the flexibility to blend this fuel with up to 40 percent bituminous coal with a medium sulfur content. Applicant's Ex. 8 at SC6 (State Air Quality/PSD Permit). NRG's witness Mr. John Klumpyan explained why NRG selected this fuel mix in his prefiled testimony:

NRG is a large purchaser of coal in the United States and is well aware of the relative availability and economics and how they change over time. Based on this knowledge and knowledge of the transportation system serving the Limestone Station, we made our decision on which fuels in which proportions would provide adequate flexibility to ensure the success of the project in terms of economics and protection against fuel shortages and interruptions. Once that decision was made and the project defined, the engineering team selected boiler and AQCS technologies to include in the application.

Applicant's Ex. 24 at 15:5 11 (J. Klumpyan). The fuel to be fired in Limestone Unit 3 was selected to ensure the economic viability of the project, and was based on a balance between the desire to use low-sulfur subbituminous coal and the need to prevent fuel shortages and supply interruptions.

While NRG proposed fuel flexibility for Limestone Unit 3 to ensure economic viability of the Limestone Unit 3 project, the fuel mix also drove the suite of emissions controls ultimately selected by NRG. NRG's witness Dr. Bill Frazier testified:

The major emission control system decision, which varies depending upon fuel selection, is the choice of wet or dry FGD technology. The BACT decisions to utilize dry FGD systems have predominantly been limited to projects which only use low sulfur coals, such as low sulfur sub-bituminous coals. Wet FGD systems

have been determined to be SO<sub>2</sub> BACT for most, if not all, projects utilizing high sulfur coals, exclusively or as blends with other lower sulfur coals. . . .

In order to obtain the lowest SO<sub>2</sub> emission rates possible for the project design fuels, wet FGD technology is proposed. Maintaining fuel procurement flexibility to allow the use of petroleum coke blends and bituminous coal blends essentially eliminated dry FGD technology from further BACT consideration.

Applicant's Ex. 49 at 21:18-36 (W. Frazier). The fuel flexibility sought for Limestone Unit 3 drove NRG to select a more expensive emissions control train that will employ wet FGD scrubber technology.

Even if Limestone Unit 3 were limited to low-sulfur subbituminous coal, this would not have affected the BACT emission limits for Limestone Unit 3. Mr. Frazier further testified:

Substituting lower sulfur coals for a design fuel is sometimes considered as an SO<sub>2</sub> control alternative, when lower SO<sub>2</sub> emission limits would result. However, this option would not result in lower SO<sub>2</sub> BACT emission limits for Limestone Unit 3. The proposed SO<sub>2</sub> emission limits for Limestone Unit 3 are consistent with SO<sub>2</sub> emission limits established for projects utilizing only low sulfur sub-bituminous coals such as JK Spruce Unit 2 and other low sulfur sub-bituminous coal projects. Therefore, restricting the fuel supply for Limestone Unit 3 to low sulfur sub-bituminous coal would not result in lower SO<sub>2</sub> emission limits for the facility, and would at the same time redefine the project as proposed by NRG.

Applicant's Ex. 49 at 22:12 20 (W. Frazier) (emphasis added). The wet FGD control technology that NRG has proposed as a result of Limestone Unit 3's fuel flexibility resulted in a BACT emission rate that is equivalent to what would have been proposed as BACT if Limestone Unit 3 were limited to lower-sulfur coals.

The fuel flexibility is a fundamental element of the Limestone Unit 3 project that affects the project's economic viability. Moreover, the fuel flexibility proposed for Limestone Unit 3 did not affect the ultimate BACT emission limit proposal, because that flexibility drove NRG to propose the higher-performing wet FGD sulfur control technology. RCOLOL's exception should be overruled.

**II. The Limestone Unit 3 project will be protective of the public's health and welfare and physical property.**

The record in this matter strongly supports the ALJs' determination that the modeling presented by NRG was conducted in accordance with TCEQ and EPA policy and guidance and represents a conservative prediction of the Limestone Unit 3 project's air quality impacts. That modeling, which was audited by the Executive Director, served as the basis for the ALJs' conclusion that the Limestone Unit 3 project will be protective of the public's health and physical property.

**A. The ALJs' finding regarding the scope of the required modeling is proper.**

The ALJs correctly concluded that the employees and contract workers of Valence Operating Company ("Valence"), which owns mineral interests beneath part of the Limestone Station, are not members of the "general public" when working at the Limestone Station. PFD at 60. Based on that determination, and the proposed permit requirement that NRG fence the entire property boundary used for modeling and maintain control over the fenced area, the ALJs find that NRG properly limited its air dispersion modeling demonstration to receptors at and beyond the Limestone Station property line.

Valence did not file exceptions to the ALJs' conclusions. Sierra Club, however, excepts to Proposed Finding of Fact No. 47. Sierra Club's Exceptions at 3. Sierra Club seeks to change the finding from (A) *NRG's modeling at and beyond the property line is proper* to (B) *NRG did not have to model Valence workers*. The Commission should overrule Sierra Club's exception. Sierra Club's proposed changes, by limiting the finding to Valence employees and contract workers, limits the finding in a manner that is inconsistent with the ALJs' analysis and the basis of that determination. The ALJs concluded both (1) that Valence is not the general public and (2) that with the required fence, the portion of the atmosphere above the Limestone Station should not be considered "ambient air." PFD at 60, 64. Moreover, Sierra Club's argument that the ALJs' proposed Finding of Fact No. 47 is written "in a broad fashion with implications beyond the scope of this proceeding" is baseless. This is a finding of fact, based on the record in this matter, and is completely appropriate.

The ALJs' proposed Finding of Fact No. 47 should not be changed and Sierra Club's exception on this point should be overruled.

**B. The ALJs correctly concluded that on-site preconstruction air quality monitoring is unnecessary.**

The record in this matter overwhelmingly supports the ALJs' conclusion that the conservative background concentrations used in the modeling eliminate any need for conducting one year of on-site preconstruction air quality monitoring. PFD at 84-86.

The Executive Director did not require on-site preconstruction monitoring as part of NRG's air quality analysis. As explained in the Executive Director's response to public comment on the State Air Quality/PSD Application, the maximum predicted off-property impacts of criteria pollutant NO<sub>2</sub> fell below the PSD monitoring significance threshold. Applicant's Ex. 12 at p.18 (Executive Director's Response to Public Comment, State Air Quality/PSD Application); Applicant's Ex. 33 at p.4 (Modeling Audit, State Air Quality/PSD Application). For criteria pollutants SO<sub>2</sub> and PM<sub>10</sub>, the Executive Director relied on ambient monitoring data from Travis County monitors to provide conservative and appropriate estimates of background concentrations of SO<sub>2</sub> and PM<sub>10</sub> in Limestone County. Applicant's Ex. 33 at p.5 (Modeling Audit, State Air Quality/PSD Application). As explained by the Executive Director, "TCEQ customarily relies on data collected from continuous ambient monitoring stations (CAMS), sited at various locations around the state, to provide conservative estimates of background air quality levels." Applicant's Ex. 12 at p.18 (Executive Director's Response to Public Comment, State Air Quality/PSD Application).

Protestant CEC demands on-site preconstruction ambient monitoring, citing "concerns" that the area in which the Limestone Unit 3 project is located is already in nonattainment with one or more unspecified NAAQS. CEC's Exceptions at 3. Limestone County has not been designated a nonattainment area. Applicant's Ex. 6 at NRG000190 (State Air Quality/PSD Application). There is no evidence in the record that Limestone County is a nonattainment area, or approaching nonattainment, for any criteria pollutant. NRG's conservative air dispersion modeling, audited and approved by the Executive Director, predicts that the maximum off-property impacts of all criteria pollutants will fall below the NAAQS. Applicant's Ex. 33 at 4-5 (Modeling Audit, State Air Quality/PSD Application). Protestant CEC's statement represents an expression of concern by a lay witness and has no probative value, given the absence of evidence in the record.

The Executive Director properly concluded that preconstruction air quality monitoring was not required for the Limestone Unit 3 project. CEC's exception should be overruled.

**C. Sierra Club's proposed findings regarding model selection are unnecessary.**

The ALJs correctly conclude in Finding of Fact No. 49 that NRG conducted its air dispersion modeling with models that were approved and recommended by both EPA and TCEQ at the time that the modeling was performed and submitted to TCEQ. Proposed Order at 7. Sierra Club excepts to Finding of Fact No. 49 and requests a revision to Finding of Fact No. 49 to note that the Industrial Source Complex Short-Time Model Version 3 ("ISCST3") and ISCST3-Prime models were recommended "at the time that the application was submitted." Sierra Club's Exceptions at 8. NRG has no objection to Sierra Club's proposed change to Finding of Fact No. 49, though the proposed change has no legal or factual significance.

Sierra Club's exceptions request two additional findings of fact regarding model selection. The ALJs properly refused to include these findings in the Proposed Order, and Sierra Club's exceptions seeking to add its proposed findings to the order should be overruled. Sierra Club's proposed findings, which purport to explain NRG's intent and state of mind with respect to model selection, are wholly irrelevant. It is undisputed that NRG conducted its air dispersion modeling with an approved model.

**D. NRG conducted its modeling properly and in accordance with TCEQ and EPA policies.**

The record in this matter overwhelmingly supports the ALJs' Finding of Fact No. 50 that NRG performed its modeling "in accordance with applicable air quality rules and guidance." Proposed Order at 7.

Sierra Club excepts, arguing that Finding of Fact No. 50 should be limited to a finding that NRG performed its modeling in accordance with TCEQ rules and the Executive Director's modeling guidance. Sierra Club's Exceptions at 8. While NRG agrees with Sierra Club that NRG conducted its modeling in accordance with TCEQ rules and guidance, Sierra Club's exception should be overruled, as it wrongly ignores the fact that NRG's modeling was conducted in a manner that the ALJs confirmed is consistent with federal modeling guidance, as well.

For example, one disputed issue in this matter (addressed in greater detail below) relates to the proper significance level for a PM<sub>10</sub> increment modeling demonstration. NRG used the same significance level (5 µg/m<sup>3</sup>) for its PM<sub>10</sub> NAAQS modeling demonstration and its PM<sub>10</sub> PSD increment modeling demonstration. 2 Tr. 347:1 - 349:4 (A. Pakrasi). Sierra Club's witness Ms. Camille Sears argued that different significance levels should be used for the two analyses. EPA's *New Source Review Workshop Manual* directs applicants to use the same significance level for both NAAQS and increment demonstrations. Applicant's Ex. 32 at C.26 & Table C-4 (EPA, *New Source Review Workshop Manual* (Draft 1990)). NRG followed this federal guidance in conducting its modeling. Applicant's Ex. 35 at 14:1-9 (A. Pakrasi).

Another disputed issue in this matter relates to the receptors for which an applicant must conduct full modeling for a project. In identifying the receptors to be modeled for the Limestone Unit 3 project, NRG -- unlike Sierra Club's witness Camille Sears -- conducted its modeling in conformance with the guidance provided in EPA's *New Source Review Workshop Manual*, that a source can only be considered to cause or contribute to a violation of the NAAQS or PSD increment if the source's own impact is significant at a violating receptor at the time of a predicted violation. Applicant's Ex. 35 at 43:27-31 (A. Pakrasi); *see also* Applicant's Ex. 32 at C.52 (EPA, *New Source Review Workshop Manual* (Draft 1990)).

The evidentiary record in this matter contains other examples where NRG's modeling was found to be consistent with EPA guidelines. The treatment in the model of low wind speed hours known as "calms" was a topic of significant discussion during the hearing on the merits. As explained by Dr. Pakrasi, NRG treated the calms from the Waco meteorological dataset in accordance with EPA Guidelines established in Part 51, Appendix W when modeling the Limestone Unit 3 project. 5 Tr. 1101:16-24 (A. Pakrasi). The ALJs confirm this in the PFD. PFD at 84.

Sierra Club is incorrect in arguing that the ALJs' Finding of Fact No. 50 "does not accurately reflect the record." NRG's modeling was conducted in a manner that is consistent with Texas and federal guidelines. Sierra Club's exception on this point should be overruled, as the record supports Finding of Fact No. 50.

**E. The ALJs correctly concluded that 5  $\mu\text{g}/\text{m}^3$  is the proper significance level for a 24-hour  $\text{PM}_{10}$  PSD increment modeling demonstration.**

The record in this matter overwhelmingly supports the ALJs' conclusion that 5  $\mu\text{g}/\text{m}^3$  is the significance level for 24-hour  $\text{PM}_{10}$  for both the NAAQS and PSD increment. PFD at 68.

The "significance level" is used in air dispersion modeling to determine if the predicted air quality impacts of a project are greater than *de minimis* and thus whether full dispersion modeling is required for that particular pollutant. If full modeling is required, the significance level is used to define the extent of the receptor grid over which that modeling must be conducted. Applicant's Ex. 35 at 43:27-31 (A. Pakrasi). If a project's maximum predicted off-property impacts fall below the significance level, the project is deemed *de minimis* and the modeling demonstration is complete for that pollutant. Applicant's Ex. 35 at 43:21-26 (A. Pakrasi). Full modeling is conducted for the receptors at which the project's impacts exceed the significance level.

During the hearing on the merits, Sierra Club disputed the position taken by NRG and the Executive Director that 5  $\mu\text{g}/\text{m}^3$  is the proper significance level for conducting 24-hour  $\text{PM}_{10}$  PSD increment modeling. Sierra Club now excepts to the ALJs' conclusion that NRG properly used 5  $\mu\text{g}/\text{m}^3$  as the significance level for NRG's 24-hour  $\text{PM}_{10}$  PSD increment modeling. Sierra Club's Exceptions at 4.

As Sierra Club acknowledges in its exceptions, it is both EPA and TCEQ policy to use 5  $\mu\text{g}/\text{m}^3$  as the significance level for 24-hour  $\text{PM}_{10}$  PSD increment modeling. Sierra Club's Exceptions at 4. Sierra Club has offered no alternative significance level, but relies on an argument that no rule -- only guidance -- directs applicants to use the significance levels for both NAAQS and PSD increment modeling. Both TCEQ's *Air Quality Modeling Guidelines* and EPA's *New Source Review Workshop Manual* direct applicants to use 5  $\mu\text{g}/\text{m}^3$  as the significance level for 24-hour  $\text{PM}_{10}$  PSD increment modeling. See Applicant's Ex. 32 at C.26 & Table C-4 (EPA, New Source Review Workshop Manual (Draft 1990)); Applicant's Ex. 37 at 29, 24 & Appendix A (TCEQ, Air Quality Modeling Guidelines (1999)). NRG's modeling experts Dr. Arijit Pakrasi and David Cabe, and Robert Opiela, the senior air dispersion modeler for the TCEQ's Air Permits Division, identify 5  $\mu\text{g}/\text{m}^3$  as the 24-hour  $\text{PM}_{10}$  increment

significance level used in the longstanding practice of Texas and other states. 2 Tr. 347:1 - 349:4 (A. Pakrasi); 5 Tr. 1141:12 - 1142:2 (D. Cabe); 5 Tr. 1043:15-19 (R. Opiela).

Given the evidence in the record regarding EPA and TCEQ practice with respect to the significance levels for PSD increment modeling, the ALJs reached the inescapable conclusion that  $5 \mu\text{g}/\text{m}^3$  is the appropriate significance level for 24-hour  $\text{PM}_{10}$  increment modeling. The ALJs' conclusion is consistent with longstanding Commission policy, and was also reached by a Pennsylvania state court in a recent contested matter in which the parties similarly disputed whether EPA's significance levels applied to PSD increment modeling. *See Groce v. Dep't of Env't'l Protection*, No. 2355, C.D. 2006 at 13-18 (Commonwealth Court of Pennsylvania, April 11, 2007).

Sierra Club's exception on this point should be overruled. The ALJs are correct in approving NRG's use of  $5 \mu\text{g}/\text{m}^3$  as the significance level for the Limestone Unit 3 project 24-hour  $\text{PM}_{10}$  PSD increment modeling demonstration.

**F. The ALJs correctly concluded that NRG employed appropriate background and retrieval source data in performing the dispersion modeling.**

The record in this matter fully supports the ALJs' conclusion that NRG's modeling demonstrations, which combine monitored background concentrations from Travis County with a retrieval of nearby point sources, represent an acceptable and "very conservative" approach to predicting the air quality impacts of the Limestone Unit 3 project. PFD at 86.

Protestant CEC objects to NRG's methodology, arguing (1) that NRG should be required to use the "screening background concentration" from TCEQ's 1998 guidance on conducting screening modeling demonstrations and (2) that NRG's modeling is improper because it excludes Big Brown I and II, as well as sources authorized by permit-by-rule ("PBR") in the vicinity of the Limestone Station. CEC's Exceptions at 1-3. CEC's objections should be overruled.

CEC seeks to apply background concentrations from a guidance document that is wholly inapplicable to NRG's PSD NAAQS demonstrations. The 1998 guidance document cited by CEC establishes screening background concentrations that can be used in certain expedited State NAAQS screening demonstrations, which is a completely different methodology than the full modeling performed by NRG for the PSD NAAQS demonstration submitted as part of the

State Air Quality/PSD Application. To compare CEC's proposed 3-hour average SO<sub>2</sub> background concentration to two monitored concentrations discussed at the hearing:

- Travis County monitored concentration (used in modeling): 17.89 µg/m<sup>3</sup> [Applicant's Ex. 6 at NRG000220]
- Highest 3-hour monitored concentration in Texas in 2008, from Corpus Christi: 700 µg/m<sup>3</sup> [2 Tr. 355:17-25 (A. Pakrasi)]
- CEC's proposed screening background concentration: 1040 µg/m<sup>3</sup>

CEC proposes a background concentration for Limestone County that is nearly 50% greater than the highest 3-hour SO<sub>2</sub> concentration monitored anywhere in the State of Texas in 2008.

NRG selected Travis County ambient monitoring data for background concentrations of NO<sub>2</sub>, SO<sub>2</sub> and PM<sub>10</sub> for use in the Limestone Unit 3 project modeling. Applicant's Ex. 35 at 46:2-9 (A. Pakrasi). NRG selected Travis County as a conservative estimate of the ambient background contributions of area and non-point source emissions, based on Travis County's higher population, greater vehicle traffic, and greater construction activity when compared to Limestone County. Applicant's Ex. 35 at 46:2-22 (A. Pakrasi); Applicant's Ex. 6 at NRG000633-NRG000644 (State Air Quality/PSD Application). As stated by Dr. Pakrasi during the hearing, and confirmed by Mr. Opiela, the background concentration in the model accounts for the contributions of the nonpoint sources in the vicinity of the source being modeled. 1 Tr. 232:20 - 233:3 (A. Pakrasi); 4 Tr. 900:1-7 (R. Opiela). Travis County provides a conservative background concentration for modeling the Limestone Unit 3 project because those nonpoint source emissions are significantly higher in more-populous Travis County than Limestone County. Applicant's Ex. 6 at NRG000633-NRG000644 (State Air Quality/PSD Application). As the ALJs concluded, combining the Travis County background concentrations with the actual point source emissions information for the industrial sources in and around the Limestone Station helped to ensure the conservatism of NRG's air quality analysis. PFD at 86.

CEC is simply incorrect about the sources included in NRG's retrieval. NRG included appropriate point sources in the vicinity of the Limestone Station in its modeling demonstration, including the Big Brown plant cited by CEC. The emissions contributions of large point sources, which are greater in Limestone County than in Travis County, were included in the modeling through the point source database ("PSDB") retrieval. 1 Tr. 230:19 - 231:7 (A. Pakrasi). NRG obtained its PSDB retrievals from the TCEQ. In accordance with TCEQ

modeling guidelines, the retrieval includes all point sources in the TCEQ's PSDB within the radius of significant impact of the Limestone Unit 3 project plus 50 kilometers. Applicant's Ex. 35 at 45:1-4 (A. Pakrasi). NRG's modeling included the conservative background concentration from Travis County and the contributions of point sources in the vicinity of the Limestone Station, through the PSD retrieval. Moreover, CEC's allegation that Big Brown Units 1 and 2 are not accounted for in the NRG modeling is simply wrong. As explained by Dr. Pakrasi during the hearing, and reflected in the State Air Quality/PSD Application, NRG accounted for Big Brown Units I and II in the Limestone Unit 3 project modeling, as the Big Brown sources were included in the PSDB retrieval data provided to NRG by the TCEQ Air Permits Division. 1 Tr. 214:7 - 215:14 (A. Pakrasi).<sup>5</sup> CEC's objections should be overruled.

**G. The ALJs were correct in approving NRG's use of longstanding TCEQ policy regarding the modeling of haul road emissions and low-level fugitive sources.**

Sierra Club excepts to the ALJs' conclusions with respect to the treatment of haul road emissions and low-level fugitive emissions sources. Sierra Club Exceptions at 5. In each case, Sierra Club has challenged aspects of NRG's modeling in which NRG acted in strict conformance with longstanding TCEQ policies. The record in this matter contains ample evidence of the sound technical bases for those agency policies and the fact that NRG properly applied those policies in performing the air quality analysis for the Limestone Unit 3 project.

**1. Haul Road Emissions**

NRG included on-site plant road emissions in the annual PM<sub>10</sub> NAAQS and PSD increment modeling runs. Applicant's Ex. 35 at 26:16-19 (A. Pakrasi). NRG excluded haul road emissions from the 24-hour PM<sub>10</sub> NAAQS and PSD increment modeling runs, however, in accordance with the TCEQ's Air Quality Modeling Guidelines. Applicant's Ex. 37 at 58 (TCEQ Air Quality Modeling Guidelines). The haul road guidance found in the Air Quality Modeling

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<sup>5</sup> NRG also included the emissions of then-proposed Big Brown Unit 3, which was subsequently cancelled, in its full dispersion modeling, as a result of its efforts to update the PSDB retrieval data provided by the Air Permits Division. Applicant's Ex. 6 at NRG000201 (State Air Quality/PSD Application). The subsequent cancellation of three of the projects that had been included as a result of the retrieval update (Twin Oaks, Big Brown Unit 3, and Lake Creek Unit 3) represents yet another element of conservatism in NRG's modeling, as those cancelled projects represent an estimated 33,000 tons of SO<sub>2</sub> in model inputs that will not occur. Applicant's Ex. 35 at 54:19-11 (A. Pakrasi); 2 Tr. 262:2-17 (A. Pakrasi).

Guidelines has previously been upheld by the Commission. Applicant's Ex. 84 at 5 (Oak Grove Final Order); see also Applicant's Ex. 85 at 5 (Sandy Creek Final Order).

NRG's expert witness modeler Dr. Arijit Pakrasi presented testimony regarding the technical justification for the TCEQ's recommended treatment of haul road emissions, as well as his experience with other state permitting authorities that, like Texas, direct applicants to exclude haul road emissions from short-term modeling runs. Applicant's Ex. 35 at 27:5-34 (A. Pakrasi). Robert Opiela, testifying on behalf of the Executive Director, discussed the agency's technical basis for the haul road policy at length during the hearing on the merits. 4 Tr. 996:2 - 999:16 (R. Opiela).

Sierra Club's witness Ms. Sears acknowledged that NRG's exclusion of plant road emissions from the 24-hour PM<sub>10</sub> NAAQS and PSD increment modeling runs was consistent with TCEQ policy. 4 Tr. 781:14-17 (C. Sears). Sierra Club's exception on this issue represents an attack on well-settled and technically sound Commission policy and should be overruled.

## **2. Low-Level Fugitive Sources**

As with the haul roads, Sierra Club's exception is not a challenge to the modeling work performed by NRG, but rather a challenge of well-established TCEQ modeling policy. In accordance with TCEQ guidance, NRG applied the 0.6 modeling fugitive adjustment factor in establishing model input emission rates for low-level fugitive emission sources. Applicant's Ex. 35 at 24:17-26 (A. Pakrasi). The use of the 0.6 factor to avoid overpredictions of impacts from low-level fugitive sources is established in Applicant's Exhibit No. 40, a 2002 TCEQ memorandum from Dom Ruggeri, Team Leader of the TCEQ's Air Dispersion Modeling Team.

Like the agency's policy regarding haul roads, the record contains a great deal of evidence regarding the technical justification for the policy. The 2002 memorandum itself provides that basis. *See* Applicant's Ex. 40 (TCEQ, *Modeling Adjustment Factor for Fugitive Emissions* (March 6, 2002)). Mr. Opiela further discussed the basis for the 0.6 fugitive adjustment factor during the hearing on the merits. 4 Tr. 1005:17 - 1010:4 (R. Opiela); 5 Tr. 1036:24 - 1038:16 (R. Opiela).

NRG's application of the 0.6 adjustment factor to low-level fugitive sources to avoid modeled overpredictions is consistent with agency policy, was audited and approved by the Executive Director, and found reliable by the ALJs. Sierra Club's witness Ms. Sears does not dispute that NRG followed this guidance in performing the modeling. 4 Tr. 775:4-15 (C. Sears). Longstanding TCEQ policy supports NRG's use of the fugitive adjustment factor for low-level fugitive sources in its modeling, and Sierra Club's objection on this point should be overruled.

Finally, Sierra Club proposes a finding of fact that the TCEQ's modeling policies regarding haul roads and the 0.6 adjustment factor for low level fugitive sources have not been subject to notice-and-comment rulemaking or approved by EPA. Such a finding is unnecessary, and Sierra Club's request should be overruled.

**H. The ALJs correctly approved of NRG's use of the meteorological data supplied by the Executive Director.**

Sierra Club excepts to the ALJs' determination that NRG appropriately relied on the meteorological data supplied by the TCEQ, and that NRG processed that data appropriately in conducting the Limestone Unit 3 project modeling. Sierra Club's Exceptions at 5. Sierra Club's exceptions on this subject should be overruled.

For the Limestone Unit 3 project modeling, NRG used National Weather Service ("NWS") meteorological data from the Waco airport that had been preprocessed for use in dispersion modeling and was supplied to NRG by the TCEQ Air Permits Division, based on the location of the Limestone Station. Applicant's Ex. 35 at 32:23-29 (A. Pakrasi). Sierra Club fails to explain the basis for its exceptions regarding meteorological data. At the hearing, Sierra Club challenged (1) the quality of the meteorological data used by NRG, in particular the "calm hours" in the dataset, (2) NRG's treatment of those calm hours, and (3) whether the data from the Waco airport was representative of the conditions at the Limestone Station. The ALJs concluded that the five-year NWS dataset provided by the Air Permits Division "was sufficient and appropriate to use in the modeling performed in support of this application." PFD at 84.

The record in this matter fully supports the ALJs' conclusion. The five years of meteorological data included in that set constitutes a robust and reliable dataset for purposes of air dispersion modeling. The Executive Director considers the Waco NWS meteorological data

acceptable for purposes of air dispersion modeling. 4 Tr. 990:1-5 (R. Opiela). Expert witness for the Executive Director Mr. Opiela explained the basis for his opinion with respect to NWS data:

In my opinion, it's appropriate because it is complete, it's QA/QC'd and reliable. It's gathered by or was gathered by trained professionals from the National Weather Service, and they have quality control procedures to follow, and it's complete data. If we had — it's reliable.

5 Tr. 1042:2-7 (R. Opiela). The TCEQ provided NRG high-quality meteorological data. Sierra Club's own exhibit, an EPA guidance document regarding the use of meteorological data for modeling purposes, states that "airport data continue to be acceptable for use in modeling." Sierra Club's Ex. 8 at 6-30 (EPA, Meteorological Monitoring Guidance for Regulatory Modeling Applications (2000)).

The calm hours found in the Waco NWS dataset do not undermine its reliability for modeling purposes. As explained by Dr. Pakrasi, the percentage of calms in the dataset (less than 2%) is a small fraction of the data recovery limits established by EPA (10%). 5 Tr. 1115:2-9 (A. Pakrasi). Moreover, EPA has provided a reliable means for accounting for calm hours in the model, and that NRG followed that methodology in processing the Waco dataset for the Limestone Unit 3 project modeling. 2 Tr. 362:3 - 363:12 (A. Pakrasi). The presence of calms in the Waco data does not undermine its value or the reliability of modeling based on that data.

NRG's use of the data was not based solely on the fact that it was the dataset directed by the TCEQ, but also on a determination by NRG's modeler that the Waco data satisfies the requirements of EPA's modeling guidelines in 40 CFR Part 51, Appendix W. 2 Tr. 358:6-20 (A. Pakrasi). The Waco data was generated at a monitor location that is both spatially and temporally representative of the Limestone Station. 2 Tr. 358:20-23 (A. Pakrasi). Both Dr. Pakrasi and Robert Opiela offered opinions that Waco is representative, based on the relatively short distance between the Waco monitor and Limestone Station (approximately 60 miles) and the absence of any surface topographical features near or between the two locations (such as mountains or valleys, or coastal effects) that would make the wind blow differently at the two locations. 2 Tr. 360:6-21 (A. Pakrasi); 4 Tr. 990:1 - 991:6 (R. Opiela).

Sierra Club further requests that the ALJs and the Commission delete portions of the PFD on pages 81-82 in which the ALJs weighed the credibility of the parties' modeling expert witnesses. Sierra Club's Exceptions at 7. Given that the ALJs' evaluation of the experts' credibility was central to their determinations on modeling issues in this matter, these paragraphs should remain in the PFD and Sierra Club's exceptions should be overruled.

**I. Sierra Club's exceptions ignore the Executive Director's technical review of NRG's State Air Quality/PSD Application.**

Sierra Club excepts to Finding of Fact No. 217, which summarizes the ALJs' conclusions regarding the evaluation of pollutants using the TCEQ's effects screening levels ("ESLs"). Sierra Club's Exceptions at 10. The ALJs' proposed Finding of Fact No. 217 is fully supported by the record in this matter, and Sierra Club's exception should be overruled.

Sierra Club's exception to Finding of Fact No. 217, which seeks to qualify the ALJs' proposed finding by noting that it is "[b]ased on the application and review pursuant to current ESLs," is wholly unnecessary. Moreover, the qualifying language offered by Sierra Club discounts the Executive Director's independent conclusion following its technical review of the application and the ALJs affirmative determination that "[n]o adverse public health or welfare effects will result."

Similarly, Sierra Club's exceptions to the ALJs' proposed Findings of Fact Nos. 218 - 220 ignore the role of the Executive Director in concluding that the Limestone Unit 3 project sources will comply with the requirements of 30 TAC Chapter 111. Sierra Club proposes to qualify each finding by noting that it is "[b]ased on application representations and in accordance with the permit terms." Sierra Club's proposed qualifying language is unnecessary; more importantly, it ignores the Executive Director's role in making an affirmative determination that the Limestone Unit 3 project sources in question will qualify with the listed requirements. Sierra Club's exceptions to Findings of Fact Nos. 217-220 should be overruled.

**III. The ALJs correctly found that the Limestone Unit 3 project will not measurably cause or contribute to an exceedance of the ozone NAAQS.**

The record in this matter, as well as Commission and court precedent, wholly support the ALJs' determination that the Limestone Unit 3 project will not cause or contribute to air pollution in excess of the ozone NAAQS. PFD at 92.

Protestant RCOLOL excepts to the ALJs' conclusion, based on a tortured reading of the Amarillo Court of Appeals' decision in the *Blue Skies Alliance* case and RCOLOL's refusal to acknowledge NRG's enforceable, voluntary commitment not to increase NO<sub>x</sub> emissions from the Limestone Station, on both a long- and short-term basis. RCOLOL's exceptions should be overruled.

RCOLOL's discussion of the *Blue Skies Alliance* decision attempts to disguise the fact that the court actually upheld the Commission's determination that the Sandy Creek project would not cause or contribute to an ozone NAAQS exceedance. *Blue Skies Alliance v. TCEQ*, 283 S.W.3d 525, 533 (Tex. App.--Amarillo 2009, no pet. h.). It is true that the court states that it found nothing indicating that the Commission intended to "create a rule of general applicability." *Id.* at 531. However, the *Blue Skies Alliance* court held that the Commission has the authority to determine, on a case-by-case basis, that "the 'cause or contribute to' standard will tolerate some insignificant level of contribution to a downwind NAAQS ozone exceedance." *Id.* The Executive Director's evaluation of NRG's photochemical modeling analysis in this matter is consistent with the authority confirmed by the *Blue Skies Alliance* court: on a case-by-case basis, based on a review of NRG's photochemical modeling analysis, the Executive Director determined that the Limestone Unit 3 project would not cause or contribute to an ozone NAAQS exceedance. Executive Director's Ex. ED-9 at 6 (Preliminary Determination Summary, State Air Quality/PSD Application).

RCOLOL's disregard for NRG's no net increase commitments further undermines its argument. RCOLOL's list of "undisputed facts" is incomplete, based on its omission of any reference to the proposed permit provisions enforcing NRG's commitment not to increase Limestone Station NO<sub>x</sub> emissions, on an annual or 30-day rolling average basis. Moreover, the statements about the predicted ozone impacts of Limestone Unit 3 are not "undisputed," as RCOLOL references photochemical modeling results that do not account for NRG's no net increase commitments.

NRG conducted its photochemical modeling analysis prior to making the commitment to have no net increase from the Limestone Station in both annual and 30-day rolling average NO<sub>x</sub> emissions. Applicant's Ex. 69 at 35:4-23 (T. Tesche). As NRG's expert witness photochemical modeler, Dr. Tom Tesche, testified during the hearing on the merits, after

factoring in NRG's no net increase commitments with respect to NO<sub>x</sub> emissions from the Limestone Station, any impacts from the Limestone Unit 3 project on ozone levels will be nonexistent. 3 Tr. 555:2-7 (T. Tesche).

RCOLOL mischaracterizes precedent and ignores NRG's commitment not to increase NO<sub>x</sub> emissions from the Limestone Station in excepting to the ALJs' conclusions. RCOLOL's exceptions on this subject should be overruled.

#### **IV. A remand of the MACT Application elevates form over substance.**

Sierra Club takes exception to the ALJs' statement that their proposed remand of the MACT Application could be seen as an elevation of form over substance. Sierra Club's Exceptions at 2. Sierra Club's assertion that NRG "failed to identify *how* it will achieve these emissions levels" is simply incorrect. NRG identified the suite of mercury controls, consisting of fabric filter baghouse, wet FGD, selective catalytic reduction ("SCR") and sorbent injection, in the MACT Application. Applicant's Ex. 7 at 18 (MACT Application). Sierra Club is not "left to guess" at NRG's mercury MACT control technologies.

Most importantly, the information that NRG provided in the MACT Application satisfied the Executive Director the control technologies specified in the MACT Application can achieve the stringent MACT emission limits that will apply to Limestone Unit 3. As the Executive Director states in response to a public comment from Sierra Club regarding the level of detail on mercury emission controls in the MACT Application:

It should be noted that the mercury emission limits for both of the sources identified as the "best-controlled similar sources" with respect to mercury emissions (i.e., Unit 4 at the Walter Scott, Jr. Energy Center located in Iowa for subbituminous coal firing and the three bituminous coal fired boilers at the Brayton Point Station located in Massachusetts) are based on the use of ACI [activated carbon injection] in conjunction with state-of-the-art control equipment for reducing emissions of oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and filterable particulate matter. This is considered the most effective of all identified mercury emission control strategies and is consistent with the planned air pollution control technologies for the PC boiler LMS3.

Applicant's Ex. 57 at 4-5 (Executive Director's Response to Public Comments, MACT Application).

Limestone Unit 3 is subject to a mercury emission limit that the ALJs determined is MACT. PFD at 112. The MACT Permit mandates that NRG install a continuous emission monitoring system for mercury to ensure compliance with that MACT emission limit. Applicant's Ex. 9 at 8 (MACT Permit). NRG identified a suite of mercury controls, and the Executive Director had sufficient information to determine that Limestone Unit 3 will meet the applicable mercury MACT limits. Applicant's Ex. 57 at 5 (Executive Director's Response to Public Comment, MACT Application). A decision to remand the MACT application is an elevation of form over substance. Sierra Club's exception should be overruled.

**V. The draft permits will ensure compliance with the PM emission limits governing Limestone Unit 3.**

The evidentiary record in this matter fully supports the ALJs' finding that the proposed methods for measuring emissions from Limestone Unit 3 are adequate to assure compliance with the State Air Quality/PSD Permit. Proposed Order at 30. While the ALJs note in the PFD that "it would be appropriate" to require a continuous emissions monitoring system ("CEMS") for particulate matter ("PM") — in contrast to the Executive Director — the ALJs properly refrain from proposing that the Commission make PM CEMS a permit requirement.

Sierra Club proposes a series of findings regarding PM CEMS and a revision to Finding of Fact No. 228 to specify that PM must be monitored by CEMS. Sierra Club's Exceptions at 17. Sierra Club's exceptions should be overruled, and the Commission should not make the requested change to Finding of Fact No. 228.

EPA did not mandate a PM CEMS in its comments on the State Air Quality/PSD Application. EPA's comment letter on the State Air Quality/PSD Application states:

Should TCEQ decide against using PM CEMS in lieu of opacity limits and COMS, we also note that revisions to the New Source Performance Standards for electric utility boilers allow bag leak detection systems to be used in lieu of opacity limits and COMS for sources using fabric filters as PM control devices. Bag leak detection systems are already in use in a variety of source types and are required control device monitoring in a number of regulations. These systems are less expensive than PM CEMS or COMS to install, operate, and maintain, and these systems are better able to detect changes in PM concentrations than COMS.

Applicant's Ex. 73 at Deposition Exhibit 8, p. 2 3 (J. Linville Deposition). The State Air Quality/PSD Permit requires initial and periodic stack testing for PM from Limestone Unit 3, in addition to a COMS and pressure drop monitoring across the baghouse. Applicant's Ex. 8 at 9, 15, 17-18 (State Air Quality/PSD Permit). The MACT Permit requires initial and periodic stack testing for PM and baghouse pressure drop monitoring. Applicant's Ex. 9 at 5, 9 (MACT Permit).

While EPA's comments on the State Air Quality/PSD Application requested that TCEQ consider a PM CEMS, there is no evidence in the record that the compliance demonstration requirements established in the permits are insufficient to demonstrate compliance with the PM limits for Limestone Unit 3. Witness for the Applicant Colin Campbell testified, "[f]or filterable PM emissions from the Limestone Unit 3 boiler, the combined use of performance testing and baghouse pressure drop monitoring assures compliance because it relates ongoing control device operating conditions to those present during performance testing." Applicant's Ex. 71 at 33:18 22 (C. Campbell). The Executive Director, in its reasoned judgment, approved the PM compliance demonstration methods established in each permit. The weight of the evidence supports the reliability of the PM compliance demonstrations already established in the permits. Sierra Club's exceptions on this point should be overruled.

## **VI. Conclusion**

The State Air Quality/PSD Permit requires that NRG meet at least BACT emission limits, and the air quality analysis submitted by NRG and approved by the Executive Director and the ALJs demonstrates that emissions from the Limestone Unit 3 project will be protective of the public health and physical property. The ALJs properly found, based both on the photochemical modeling analysis submitted by NRG in support of the State Air Quality/PSD Application and NRG's subsequent commitments to have no net increase in short- or long-term NO<sub>x</sub> emissions, that the Limestone Unit 3 project will not cause or contribute to a violation of the ozone NAAQS.

The MACT Permit requires that NRG meet MACT emission limits for all HAPs from Limestone Unit 3 and the Limestone Unit 3 project auxiliary boiler. NRG identified the suite of controls that it will employ to control mercury emissions from Limestone Unit 3 in the MACT Application, and that information was deemed sufficient by the Executive Director to

assure compliance with the MACT Permit's stringent mercury limit. Moreover, the MACT Permit will assure compliance with the stringent MACT emission limitation established for mercury through continuous monitoring.

In the event that the Commission concludes, contrary to the positions of NRG and the Executive Director, that the MACT Application must contain additional detail regarding the previously identified control technologies to satisfy the requirements of 40 CFR § 63.43, the Commission should set forth its specific objections and allow NRG the opportunity to make alterations to the MACT Application to meet the Commission's objections in an expeditious manner. TEXAS HEALTH & SAFETY CODE § 382.0518(d),(e).<sup>6</sup> The Commission has the statutory authority to fashion appropriate relief to allow NRG to correct this form-over-substance issue, such as an order to reopen the record for further proceedings on the Commission's objections or a limited remand of the MACT Application to allow NRG to address the specific objections identified by the Commission.<sup>7</sup>

A remand of the MACT Application, where the applicable case-by-case MACT emission limits and the MACT Permit itself have been found to satisfy the applicable State and federal requirements, truly elevates form over substance. The record in this matter overwhelmingly demonstrates that the Limestone Unit 3 project satisfies the requirements for issuance of the proposed State Air Quality/PSD and MACT Permits. Accordingly, NRG requests that the Commission issue an Order overruling the exceptions filed by protestants Sierra Club, RCOLOL, CEC and Douglas W. Ray, granting the exceptions filed by NRG and the Executive Director, approving the State Air Quality/PSD and MACT Applications, and issuing State Air Quality/PSD and MACT Permits to authorize construction of the Limestone Unit 3 project.

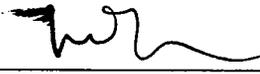
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<sup>6</sup> TEXAS HEALTH & SAFETY CODE § 382.0518(d) & (e) direct the Commission to set out in a report any specific objections to a proposed facility and to grant the permit if the applicant makes alterations to meet the Commission's objections.

<sup>7</sup> See TEXAS HEALTH & SAFETY CODE § 382.0518(d) & (e); TEX. GOV'T CODE § 2003.043(m) (authorizing the Commission to refer the matter for additional findings of fact or conclusions of law); see also 30 TAC § 80.265 (authorizing reopening the record for further proceedings).

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that I have served the original and seven copies of the Applicant NRG Texas Power LLC's Reply to Exceptions on the Chief Clerk of the TCEQ, as well as the following persons on this 23rd day of July, 2009:

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