

BEFORE THE ADMINISTRATOR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the Matter of the Final Operating Permit for:

LOUISVILLE GAS & ELECTRIC to operate
the proposed source located at 487 Corn Creek,
Bedford, Trimble County, Kentucky

Permit No. V-02-043 Revision 3
Source I.D. No. 21-223-00002

Proposed by the Commonwealth of Kentucky,
Environmental and Public Protection Cabinet

PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO THE
ISSUANCE OF THE FINAL REVISED TITLE V OPERATING PERMIT FOR THE
LOUISVILLE GAS & ELECTRIC GENERATING STATION LOCATED AT
487 CORN CREEK, BEDFORD, TRIMBLE COUNTY, KENTUCKY

Meleah Geertsma
Faith E. Bugel
ENVIRONMENTAL LAW AND
POLICY CENTER
35 East Wacker Drive, Suite 1300
Chicago, Illinois 60601
(312) 673-6500

On behalf of:

SAVE THE VALLEY

SIERRA CLUB

VALLEY WATCH

Date: April 29, 2008

Pursuant to Clean Air Act § 505(b)(2) and 40 CFR § 70.8(d), Save the Valley, Valley Watch and Sierra Club (“Petitioners”) hereby petition the Administrator (“the Administrator”) of the United States Environmental Protection Agency (“U.S. EPA”) to object to the Final Title V Operating Permit for the source located at 487 Corn Creek, Bedford, Trimble County. The permit that is the basis of this petition constitutes Revision 3 of the combined construction and operating permit for the Trimble County Generating Station owned and operated by Louisville Gas & Electric Co. (“LG&E”), which the Kentucky Division for Air Quality (“KDAQ”) proposed to the U.S. EPA.

Petitioners submitted timely comments to KDAQ regarding the draft Revision 3 permit on October 26, 2007. A true and accurate copy of those comments is attached. Exhibit 1, Oct 26 Comments. On January 11, 2008, KDAQ issued a proposed Revision 3 permit and Response to Comments. The U.S. EPA’s 45-day review period expired on February 29, 2008, Exhibit 2, Region 4 Title V deadlines, without an objection from the federal agency. KDAQ issued the Final Revision 3 Title V Permit (“Permit”) on February 29, 2008. See Exhibit 3, Rev 3 Permit. This petition therefore is filed within sixty days following the end of U.S. EPA’s 45-day review period, as required by Clean Air Act § 505(b)(2); see also Exhibit 2, Region 4 Title V deadlines. The Administrator must grant or deny this petition within sixty days after it is filed. 42 U.S.C. § 7661d(b)(2).

The Administrator must object to the Permit because it fails to comply with the applicable CAA requirements, the requirements of 40 C.F.R. Part 70 and/or requirements contained in the Kentucky SIP in a number of ways. First, the Permit fails to address harmful carbon dioxide from the proposed new unit, in violation of state and federal law mandating control of greenhouse gases. The Permit also fails to include proper best available control technology (“BACT”) limits for criteria pollutants, most notably due to omissions of BACT for PM_{2.5} and the refusal to base BACT on combinations of controls proposed by the applicant. Nor is the Permit based on an acceptable showing that its issuance will not cause or contribute to air pollution in violation of a National Ambient Air Quality Standard or Prevention of Significant Deterioration (“PSD”) increment in any area, as the applicant failed to model directly PM_{2.5}. Finally, the Permit continues to fail in several areas where the law clearly requires a different outcome, including the following requirements: (a) expression of limits in units that protect short- and long-term air quality, (b) full consideration of clean fuels in the BACT analyses, (c)

adequate support for the sulfuric acid mist BACT limit, and (d) inclusion of emissions from startup, shutdown and maintenance in the BACT analyses.

I. Unit History

This petition constitutes the second Title V petition for the new unit being constructed at the existing Trimble County Generating Station (“TC2”). Petitioners also submitted a timely Title V petition regarding Revision 2, which covered the initial Prevention of Significant Deterioration/Title V permit for the new unit, around the same time that Petitioners commenced a state administrative challenge to Revision 2. Exhibit 4, Rev 2 Title V petition.¹ The Revision 2 Title V petition is currently the subject of a deadline suit in the Eastern District of Kentucky, Civ Action No. 3:07-cv-80-KKC, over the Administrator’s failure to answer the petition within the statutory timeframe. The Parties have entered a stipulation that essentially requires the Administrator to answer the Revision 2 petition or file an answer to the complaint by June 20, 2008.

As noted in their Revision 3 comments to KDAQ, Petitioners raised in detail only those comments arising from the Revision 3 changes, or for which new law or new circumstances had arisen since the Revision 2 proceedings. Petitioners also noted their continuing concern over uncorrected problems with the Revision 2 permit, in light of the state agency’s ability to reopen and revise the permit. Exhibit 1, Rev 3 Comments at p.1. Given these substantial concerns, the thin record available at the time of the initial Revision 2 Title V petition deadline², the carrying forward of the Revision 2 errors in the current Revision 3 permit and EPA’s parallel authority to reopen and revise a Title V permit based on errors in the original PSD determinations, 42 U.S.C. 7661d(e); 40 C.F.R. 70.7(f), Petitioners attach the briefs from the state administrative proceeding to this petition and incorporate them by reference. Exhibit 5, Rev 2 redacted briefs.

¹ Petitioners received a decision from the state Hearing Officer on June 13, 2007, in which he denied Petitioner on all counts with the exception of expressing permit limits in both pounds per unit heat input and pounds per time unit. On September 28, 2007, the Secretary of the Environment and Public Protection Cabinet issued the agency’s final order, which similarly denied Petitioners on all counts and reversed the Hearing Officer with respect to setting limits in two units to protect short-term and long-term ambient air quality.

² Petitioners note the substantial barriers confronted during the public comment period, including difficulties obtaining permit and supporting materials and refusals to extend the 30 day comment period. See Exhibit 4, Revision 2 Title V Petition at 3-13.

II. Petition Standard of Review

The CAA requires the Administrator to object to a Title V permit if a petitioner “demonstrates to the Administrator that the permit is not in compliance with the requirements of [the Act], including the requirements of the applicable implementation plan.” 42 U.S.C. 7661d(b)(2). A petitioner may appeal a petition denial to the appropriate Circuit Court of Appeals, see 42 U.S.C. 7661d(b)(2) (judicial review available under Section 7607); 42 U.S.C. 7607(b)³, which then considers the Administrator’s petition answer under the arbitrary and capricious standard, see Sierra Club v. Leavitt, 368 F.3d 1300 (11th Cir. 2004) (applying arbitrary and capricious standard to appeal of 7661d petition denial); N.Y. Pub. Interest Research Group v. Whitman, 321 F.3d 316 (2nd Cir. 2003). In other words, the Administrator must articulate a reasonable basis for his decision that a petitioner has or has not made the required demonstration. If the Administrator’s decision conflicts with the statute, is based on factors Congress did not intend the Administrator to consider, is based on clear factual error, or otherwise is arbitrary and capricious, the decision cannot stand. See, e.g., New York Pub. Interest Research Group, Inc. v. Johnson, 427 F.3d 172, 181 (2d Cir. 2005) (“NYPIRG”) (rejecting Administrator’s petition denial because a Notice of Violation constituted a sufficient demonstration of non-compliance); Sierra Club v. Leavitt, 368 F. 3d at 1304-1306 (rejecting EPA interpretation that was in tension with state regulatory language, where EPA failed to explain its differential treatment of the same term).

Petitioners note that while the Administrator’s power of review should not be lightly employed, the Administrator at all times retains the authority, and indeed the duty, to object to a permit that is based on procedural and/or substantive errors. 42 U.S.C. 7661d(b)(1) and (2) (Administrator “shall” object to issuance of a permit that is not in compliance with the applicable requirements); 1990 CAA Leg. Hist. 731, 916 (Title V’s petition provision “sets out clearly the procedures required of EPA in reviewing permits. Simply put, the Administrator is required to object to permits that violate the Clean Air Act”); NYPIRG. This “supervisory” role, NYPIRG, 427 F.3d at 180, requires the Administrator to consider petitions *de novo* on their merits, as would a district court reviewing his failure to object. See 1990 CAA Leg. Hist. at 916

³ “...any other final action of the Administrator... which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit,” while review of any such action that has nationwide scope or effect, as determined by the Administrator, is in the Court of Appeals for the District of Columbia.

(Administrator to review the merits of a petition and a district court to review a petition answer *de novo*).

III. The Administrator Must Object Because the Permit Fails to Include Requirements Addressing Harmful Greenhouse Gases from TC2, Including BACT for Greenhouse Gases.

Neither the present Revision 3 draft permit nor the previous Revision 2 permit addresses the carbon dioxide (CO₂) or other greenhouse gases to be emitted from the proposed plant. Yet, TC2 will be a significant emitter of greenhouse gas (“GHGS”) pollutants. These emissions will contribute significantly to global warming and its adverse impacts on the public health, welfare, economy, and environment. The Administrator must object to the permit under the Supreme Court’s recent decision in Massachusetts v. EPA, 549 U.S. ___, 127 S. Ct. 1438 (Apr. 2, 2007), the federal PSD program and Kentucky law because it fails to address the several million tons of carbon dioxide that the facility will emit.

a. TC2 Will Emit Millions of Tons of Carbon Dioxide and Other Greenhouse Gases.

That TC2 will result in millions of tons of carbon dioxide and other GHGs is not in dispute. See, e.g., Exhibit 6, Rev 3 RTC at p. 13-14 (stating only that “there is no indication that this permitting action will result in ‘*harmful* levels of carbon dioxide’” (emphasis added) and failing to dispute that TC2 will emit several million tons of carbon dioxide). The applicant improperly provided no calculations of CO₂ and other GHG emissions. Thus, Petitioners here must rely on an estimation calculated from AP-42 emission factors for carbon dioxide and information in the application regarding the coal and coal blends being proposed for the new unit.

The initial PSD/Title V permit application submitted by LG&E to KDAQ in December 2004 lists three “potential fuel options,” including a “Performance Coal” consisting of a 70/30 percent blend of eastern bituminous and western subbituminous coals. See Exhibit 7, Rev 2 Application Section 1 at 1-1 and 1-2. For the performance coal at 90 degrees Fahrenheit, the application lists a burn rate of 687,518 lb/hour. Exhibit 8, Rev 2 Appendix E. AP-42 Table 1.1-20, “Default CO₂ Emission Factors for U.S. Coals,” lists CO₂ emission factors of 6040 lb/ton coal and 4810 lb/ton coal for medium-volatile bituminous and subbituminous coals, respectively.

Based on these figures, TC2 will emit approximately 8.5 million tons of CO₂ per year.⁴ The application and permit lack any controls for these emissions.

b. Carbon dioxide is an air pollutant under Kentucky and federal law.

Section 302(g) of the Clean Air Act defines “air pollutant” expansively to include “any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters into the ambient air.” 42 U.S.C. § 7602(g). In its opinion in Massachusetts v. EPA, the Supreme Court held that carbon dioxide and other greenhouse gases are air pollutants as defined in Section 302(g), 42 U.S.C. § 7602(g). 549 U.S. ___, 127 S. Ct. at 1459-60. The Court based its holding on the “unambiguous” language of the definition. Id. at 1460. The Court further held that because carbon dioxide is within the Clean Air Act’s definition of “air pollutant,” EPA has the authority to regulate carbon dioxide under the Act. Id. at 1462. The Massachusetts decision dispensed with any uncertainty whether carbon dioxide is an “air pollutant” under the Clean Air Act.⁵

Kentucky law employs similarly broad definitions of “air contaminant,” “air pollution,” and “air pollutant.” Under KRS 224.01-010, an “air contaminant” is defined as “smoke, dust, soot, grime, carbon, or any other particulate matter, radioactive matter, noxious acids, fumes, gases, odor, vapor, or any combination thereof.” KRS 224.01-010(1). The same chapter defines “air pollution,” in turn, as “the presence in the outdoor atmosphere of one (1) or more air contaminants in sufficient quantities and of such characteristics and duration as is or threatens to be injurious to human, plant, or animal life, or to property, or which unreasonably interferes with the comfortable enjoyment of life or property.” KRS 224.01-010(3). Kentucky regulations define “air pollutant” as synonymous with “air contaminant” under KRS 224.01-010(1). SIP-approved 401 KAR 50:010 Section 1(1)(3). Thus, for the same reasons put forth by the Supreme Court with respect to the Clean Air Act, Kentucky laws and regulations governing air pollution apply to carbon dioxide and other greenhouse gas emissions.

⁴ $(687,518 \text{ lb per hour} / 2,000 \text{ lb per ton}) \times (0.70 (6040 \text{ lb CO}_2 \text{ per ton}) + 0.30 (4810 \text{ lb CO}_2 \text{ per ton})) = 1,949,457 \text{ lb CO}_2 \text{ per hour.}$

$(1,949,457 \text{ lb CO}_2 \text{ per hour} / 2,000 \text{ lb per ton}) \times 8760 \text{ hr per year} = 8,538,622 \text{ tons CO}_2 \text{ per year.}$

⁵ EPA’s then general counsel, Jonathan Z. Cannon, opined in 1998 that carbon dioxide is within the Clean Air Act’s definition of “air pollutant” and that EPA has the authority to regulate carbon dioxide. More recently, however, EPA has advanced a contrary interpretation that is contrary to the plain language of Section 302(g) and the Massachusetts v. EPA opinion.

The permitting authority does not, and indeed cannot, contend that carbon dioxide and other GHGs are not air pollutants under federal and state law. See Exhibit 6, Rev 3 RTC at 13 (erroneously arguing only that U.S. EPA and Kentucky have adopted regulations addressing greenhouse gases).

- c. Carbon dioxide is subject to regulation under the Clean Air Act and Kentucky law.

Not only is carbon dioxide an air pollutant under federal and state law, but, contrary to KDAQ's assertion, Exhibit 6, Rev 3 RTC at 13 (CO₂ is not "otherwise regulated under any provision of the CAA at this time"), it is also clearly "subject to regulation" under the Clean Air Act and Kentucky law. U.S. EPA both currently regulates and has the unexercised authority to regulate carbon dioxide under several Sections of the Act.

As put forth in the comments submitted to KDAQ, carbon dioxide is subject to regulation because it is currently regulated under Section 821 of the Clean Air Act Amendments of 1990. Section 821(a) of the Act provides as follows:

Monitoring. – The Administrator of the Environmental Protection Agency shall *promulgate regulations* within 18 months after the enactment of the Clean Air Act Amendments of 1990 *to require that all affected sources subject to the Title V of the Clean Air Act shall also monitor carbon dioxide emissions* according to the same timetable as in Sections 511(b) and (c). The regulations shall require that such data shall be reported to the Administrator. The provisions of Section 511(e) of Title V of the Clean Air Act shall apply or purposes of this section in the same manner and to the same extent as such provision applies to the monitoring and data referred to in Section 511.⁶

(42 U.S.C. 7651k note; Pub.L. 101-549; 104 Stat. 2699; emphasis added). The language could not be clearer: in Section 821, Congress ordered EPA "to promulgate regulations" requiring that hundreds of facilities covered by Title IV monitor and report their CO₂ emissions.⁷

Not only does the Act call upon EPA to issue regulations requiring monitoring and reporting of CO₂, but in 1993, EPA actually promulgated the regulations required by Section

⁶ According to the Reporter's notes, these references to Title V are meant to refer to Title IV, and the references to Section 511 are meant to refer to Section 412.

⁷ EPA's §821 regulations, which were finalized on January 11, 1993, require CO₂ emissions monitoring (40 CFR §§75.1(b), 75.10(a)(3)); preparing and maintaining monitoring plans (40 CFR §75.33); maintaining records (40 CFR §75.57); and reporting such information to EPA, (40 CFR §§75.60 – 64). 40 CFR §75.5 prohibits operation in violation of these requirements and provides that a violation of any Part 75 requirement is a violation of the Act.

821, which are set forth at 40 C.F.R. Part 75. The purpose of Part 75 is “to establish requirements for the monitoring, recordkeeping, and reporting of sulfur dioxide (“SO₂”), nitrogen oxides (“NO_x”), and *carbon dioxide (“CO₂”) emissions.*” 40 C.F.R. § 75.1 (emphasis added).⁸ Kentucky has incorporated Part 75 by reference into its own regulations. *See, e.g.*, 401 KAR 52:060 Section 2(d). Rules on information gathering, record-keeping and data publication have long been recognized as falling within the conventional understanding of the word “regulation.” *See, e.g.*, Buckley v. Valeo, 424 U.S. 1, 66-67 (1979) (record-keeping and reporting requirements constitute regulation of political speech). These monitoring requirements clearly establish carbon dioxide as subject to regulation, and hence as a “regulated NSR pollutant.” *See* 40 C.F.R. § 52.21(b)(50) and 401 KAR 51:001 Section 1(211) (“regulated NSR pollutant” includes “any pollutant . . . subject to regulation under the Act.”)

Carbon dioxide also is subject to regulation under Section 202, which requires standards applicable to emissions of “any air pollutant” from motor vehicles, and Section 111⁹, which requires standards of performance for emissions of “air pollutants” from new stationary sources. 42 U.S.C. §§ 7411, 7521. While EPA and the States have not yet established limits under Sections 202 and 111, they have the clear statutory authority to do so. Regulation under Sections 202 and 111 is required where air pollution “may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7411(b)(10)(A); 42 U.S.C. § 7521(a)(1). The Supreme Court’s holding in Massachusetts v. EPA dispensed with any uncertainty whether EPA and the states have the authority to take action to control carbon dioxide emissions under Sections 202 and 111.

The Massachusetts v. EPA case specifically involved a challenge to EPA’s failure to prescribe regulations on carbon dioxide emissions from motor vehicles under Section 202 of the Clean Air Act. The Court held that EPA has the authority to issue such regulations, and rejected the excuses advanced by EPA for failing to do so. Massachusetts, 549 U.S. ___, 127 S. Ct. at

⁸ The Part 75 regulations generally require monitoring of carbon dioxide emissions through installation, certification, operation and maintenance of a continuous emission monitoring system or an alternative method (40 C.F.R. §§ 75.1(b), 75.10(a)(3)); preparation and maintenance of a monitoring plan (40 C.F.R. § 75.33); maintenance of certain records (40 C.F.R. § 75.57); and reporting of certain information to EPA, including electronic quarterly reports of carbon dioxide emissions data (40 C.F.R. §§ 75.60 – 64). 40 C.F.R. § 75.5 prohibits operation of an affected source in the absence of compliance with the substantive requirements of Part 75, and provides that a violation of any requirement of Part 75 is a violation of the Clean Air Act.

⁹ On September 24, 2007, the U.S. Court of Appeals for the District of Columbia remanded a case challenging EPA’s failure to establish emission limits for carbon dioxide emissions from power plants under Section 111 of the Clean Air Act to the agency, for reconsideration in light of the Massachusetts decision. 2007 U.S. App. LEXIS 22688 (D.C. Cir. 2007)

1459-63. Therefore, carbon dioxide is undeniably “subject to regulation” under the Act. *Id.* at 1462. Following the Court’s decision President Bush, in a May 14, 2007 Executive Order¹⁰, acknowledged EPA’s authority to regulate emissions of greenhouse gases, including carbon dioxide from motor vehicles, nonroad vehicles and nonroad engines under the Clean Air Act. The Executive Order directs EPA to coordinate with other federal agencies in undertaking such regulatory action.

d. The Permit cannot issue without required emissions information for CO₂.

The Administrator must object because the applicant failed and continues to fail to submit required information for CO₂. Under state and federal Title V requirements, an applicant must provide in its application emission-related information, including “all emissions for which the source is major and *all emissions of regulated air pollutants*” and calculations on which the emissions information is based. 401 KAR 52:020 Section 5(3)(a) and (j) (emphasis added); 40 C.F.R. 70.5(c)(3)(i) and (viii); 42 U.S.C. 7661b(c). While for a revision LG&E need only submit “the information related to the change” and “that is new or different from the most recent source-wide permit application,” 401 KAR 52:020 Section 4(2)(b) and (c), the applicant has an ongoing duty to supplement or correct an application. 401 KAR 52:020 at Section 7(1). LG&E therefore must submit all required GHG emissions information omitted from prior applications as well, including that for Revision 2. Failing to do so constitutes a violation of the Title V regulations, *Id.* at Section 7(3), and the Administrator must object. 42 U.S.C. 7661d(b)(2) (Administrator must object where permit is in non-compliance with requirements of the Act). LG&E did not include CO₂ emissions information in either the 2004 or 2007 Title V application. See id.

The requirement to report emissions in an application applies to “all emissions of regulated air pollutants.” 401 KAR 52:020 Section 5(3)(a). As described above, carbon dioxide is an “air pollutant” that is currently “regulated” under Section 821 of the Clean Air Act. The Administrator therefore must object to the Revision 3 permit for carrying forward the Revision 2 omissions and omitting CO₂ information for the Revision 3 changes, see 42 U.S.C. 7661d(b)(2) and 40 C.F.R. 70.7(a)(1) (permit renewal may only issue if permitting authority has received a

¹⁰ Available at <http://www.whitehouse.gov/news/releases/2007/05/print/20070514-1.html>

complete application)¹¹, and move to reopen the Revision 2 permit, see 42 U.S.C. 7661d(e); 40 C.F.R. 70.7(f) (a permit “shall” be reopened where the Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements.)

e. The Permit cannot issue without BACT limits for carbon dioxide.

i. BACT applies to each pollutant that is “subject to regulation” under the CAA.

A permit may not issue where it omits a required BACT limit. See 42 U.S.C. § 7475(a) and 7479(3); 40 C.F.R. 52.21(j); Alaska Dep’t of Env’tl. Conservation v. EPA, 540 U.S. 461, 484-85 (2004) (“Alaska”). As the permit must include carbon dioxide BACT limits pursuant to the recent Supreme Court decision in Massachusetts and federal and state law, the Administrator must object.

Section 165 of the federal Clean Air Act and Kentucky Air Quality Regulations prohibit the construction of a new major stationary source of air pollutants at the Trimble County site except in accordance with a prevention of significant deterioration construction permit issued by KDAQ. 42 U.S.C. § 7475(a); 401 KAR 51:017. Federal law requires a BACT analysis and BACT permit emission limitations “for each pollutant *subject to regulation* under [the Clean Air Act]” for which emissions exceed specified significance levels. 42 U.S.C. §§ 7475(a), 7479. The statutory definition of BACT also makes clear that BACT requirements apply to all air pollutants subject to regulation under the Clean Air Act, stating that “[b]est available control technology means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for *each pollutant subject to regulation under this Act...*” 42 U.S.C. 7479(3)(emphasis added); see also 40 C.F.R. § 52.21(b)(12), 401 KAR 51:001 Section 1(25).

In SIP-approved 401 KAR 51:017, Kentucky adopted, largely verbatim, the Environmental Protection Agency’s (“EPA”) Prevention of Significant Deterioration regulations set forth at 40 C.F.R. § 52.21. The EPA regulations provide that “[a] new major stationary source shall apply best available control technology *for each regulated NSR pollutant* that it would have

¹¹ See also 401 KAR 52:020 Sections 9, Completeness Review and Determination (citing “Cabinet Provisions and Procedures for Issuing Title V Permits”) and 26 (incorporating “Cabinet Provisions...” by reference); Exhibit 9, “Cabinet Provisions...,” Sections 1 (Completeness Review and Determination) and 2.II.2 (Cabinet shall issue a draft permit within 60 days of declaring application complete); 42 U.S.C. 7661b(c) (source shall submit an application and permitting authority shall approve or disapprove a completed application consistent with procedures established

the potential to emit in significant amounts.” 40 C.F.R. § 52.21(j)(1) (emphasis added); *see also* 401 KAR 51:017 Section 8. They also define “regulated NSR pollutant” as including “any pollutant . . . *subject to regulation under the Act.*” 40 C.F.R. § 52.21(b)(50)¹²; 401 KAR 51:001 Section 1(211) (emphasis added).

A pollutant is “subject to regulation” either where U.S. EPA has acted upon its legitimate authority to pass regulations or where U.S. EPA has the authority to enact regulations but has not yet done so. As put forth above, U.S. EPA both currently regulates carbon dioxide under the 1990 Clean Air Act Amendments and has additional, unexercised authority to regulate carbon dioxide, clearly establishing carbon dioxide as a pollutant subject to regulation under the Clean Air Act and hence a regulated NSR pollutant for BACT purposes. See I.b and c. Kentucky has either adopted regulations following the federal rules or incorporated the federal regulations by reference, and thus the same conclusions apply under state law.

EPA’s current position, expressed in the In Re Deseret Power Electric Cooperative case before the Environmental Appeals Board, that Congress in Section 165 used the term “regulated” to mean subject to “a statutory or regulatory provision that requires actual control of emissions” is untenable.¹³ First, this erroneous interpretation is at odds with the plain meaning of the statute. Webster’s Dictionary defines “regulation” as “an authoritative rule dealing with details or procedure; (b) a rule or order issued by an executive authority or regulatory agency of a government and having the force of law.” The definition does not limit regulation to limits on emissions. Second, the interpretation is inconsistent with the term’s context. There is no rationale for explaining why “regulation” in Section 821 means “regulation”, but that “regulation” in Section 165 means “actual control of emissions.” Indeed, the Act contains numerous other

for consideration of such applications); 42 U.S.C. 7661d(b)(2) (Administrator shall object where petitioner demonstrates that the permit is not in compliance with the requirements of this chapter).

¹² “Regulated NSR pollutant, for purposes of this section, means the following:

- (i) Any pollutant for which a national ambient air quality standard has been promulgated and any constituents or precursors for such pollutants identified by the Administrator (e.g., volatile organic compounds are precursors for ozone);
- (ii) Any pollutant that is subject to any standard promulgated under Section 111 of the Act;
- (iii) Any Class I or Class II substance subject to a standard promulgated under or established by title VI of the Act; or
- (iv) Any pollutant that otherwise is subject to regulation under the Act; except that any or all hazardous air pollutants either listed in section 112 of the Act or added to the list pursuant to section 112(b)(2) of the Act, which have not been delisted pursuant to section 112(b)(3) of the Act, are not regulated NSR pollutants unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under section 108 of the Act.”

¹³ See briefing in In Re Deseret Power Electric Cooperative, PSD Permit Number OU-0002-04.00, U.S. EPA Environmental Appeals Board.

examples of Congress requiring regulations for many reasons aside from “actual control of emissions.”¹⁴ Third, in drafting the Clean Air Act Congress knew how to refer to “actual control of emissions” when it wanted to, and in fact created two separate terms of art for just such occasions, “emissions limitation” and “emissions standard”: “The terms ‘emission limitation’ and ‘emission standard’ mean a requirement established by the State or the Administrator which limits the quantity, rate or concentration of emissions of air pollutants . . .” 42 U.S.C. § 7602(k).¹⁵ Thus if Congress wanted to limit the applicability of Section 165 to those pollutants that were subject to such a standard or limitation, it certainly knew how to do so. It did not in Section 165. Finally, EPA’s interpretation runs afoul of the holding in *Alabama Power Co. v. Costle*, 636 F.2d 323, 403 (D.C. Cir. 1979), which foreclosed such creative narrow readings of the term “each pollutant subject to regulation” under the Act.¹⁶

Nowhere in its Response to Comments did the state permitting agency substantively respond to these arguments in Petitioners’ comments. Instead, KDAQ simply concluded without analysis that CO₂ is not “otherwise regulated under any provision of the CAA at this time.” Exhibit 6, Rev 3 RTC at 13. It also stated erroneously that, “as there are no federal regulations establishing requirements for CO₂ at stationary sources, Kentucky is prohibited [under a state law prohibiting regulation more stringent than the federal requirements] from imposing any such requirements.” *Id.* As put forth in Petitioners’ comments and above, there are both federal statutory and regulatory provisions mandating imposition of BACT for carbon dioxide. Kentucky

¹⁴ These examples include Section 165 itself: “The review provided for in subsection (a) of this section shall be preceded by an analysis in accordance with regulations of the Administrator, promulgated under this subsection, . . . of the ambient air quality at the proposed site . . .” 42 U.S.C. § 7475(e)(1). *See also* 42 U.S.C. § 7619(a) (“the Administrator shall promulgate regulations establishing an air quality monitoring system throughout the United States...”)

¹⁵ Congress then used the terms “emission limitation” and “emission standard” throughout the Act (*see, e.g.*, 42 U.S.C. § 7651d(a)(1) (“Each utility unit subject to an annual sulfur dioxide tonnage emission limitation under this section . . .”); 42 U.S.C. § 7412(f)(5) (“The Administrator shall not be required to conduct any review under this subsection or promulgate emission limitations under this subsection . . .”); 42 U.S.C. § 7521(f)(2) (“This percentage reduction shall be determined by comparing any proposed high altitude emission standards to high altitude emissions . . .”); 42 U.S.C. § 7617(a)(7) (“any aircraft emission standard under section 7571 of this title.”))

¹⁶ The only administrative task apparently reserved to the Agency . . . is to identify those . . . pollutants subject to regulation under the Act which are thereby comprehended by the statute. The language of the Act does not limit the applicability of PSD only to one or several of the pollutants regulated under the Act, . . . the plain language of section 165 . . . in a litany of repetition, provides without qualification that each of its major substantive provisions shall be effective after 7 August 1977 with regard to each pollutant subject to regulation under the Act, or with regard to any “applicable emission standard or standard of performance under” the Act. As if to make the point even more clear, the definition of BACT itself in section 169 applies to each such pollutant. *The statutory language leaves no room for limiting the phrase “each pollutant subject to regulation” . . .*

therefore is not prohibited from, and in fact is mandated to, impose the appropriate PSD requirements on the source.

ii. The PSD significance level for carbon dioxide is “any emissions”

The significance level triggering PSD applicability for a regulated NSR pollutant, other than the 15 listed in 40 C.F.R. § 52.21(b)(23)(i), is *any* net increase. 40 C.F.R. § 52.21(b)(23)(ii). CO₂ is not among the 15 pollutants listed in 40 C.F.R. § 52.21(b)(23)(i). Therefore, because CO₂ is a regulated NSR pollutant, *any* increase in emissions of this pollutant is significant and requires a BACT limit. 42 U.S.C. §§ 7475(a)(1), (4), 7479(3); 40 C.F.R. §§ 52.21(j)(2), 52.21(b)(23)(ii). As put forth above, TC2 will emit approximately 8.5 million tons of carbon dioxide per year, clearly meeting the requirement for “any” emission rate increase.

iii. The CO₂ BACT analysis must consider carbon capture and sequestration (CCS)

In its future CO₂ BACT analysis, LG&E must evaluate add-on technologies to capture and sequester the carbon dioxide emissions. U.S. EPA recently took the position that CCS is an available technology that should be considered for the control of carbon dioxide emissions. On June 22, 2007, U.S. EPA submitted comments on a Draft Environmental Impact Statement for Nevada’s White Pine Energy Station Project, an approximately 1,590 MW proposed coal-fired generating facility. Exhibit 10, U.S. EPA comments on White Pine DEIS. In its comments, the U.S. EPA directed the Bureau of Land Management to “discuss carbon capture and sequestration and other means of capturing and storing carbon dioxide as a component of the proposed alternatives.” *Id.* at 14. Information on carbon capture and sequestration technologies to guide KDAQ’s review on remand is available on the U.S. Department of Energy website, as D.O.E. is the primary federal agency working on research and development of CO₂ capture and sequestration technologies.¹⁷

Capture. The International Panel on Climate Change (“IPCC”) issued a report in 2005 discussing the main options currently available to capture CO₂ from fossil fuel-fired power

¹⁷ See <http://www.fossil.energy.gov/programs/sequestration/capture/>.

plants, including pre-combustion capture used at supercritical PC facilities.¹⁸ According to the IPCC, commercial CO₂ capture systems installed on PC facilities can reduce CO₂ emissions by 80-90% per kilowatt-hour.¹⁹ CO₂ capture systems are available today and have been applied to several small power plants.²⁰ On remand from U.S. EPA, KDAQ must require LG&E to evaluate the available CO₂ capture systems and to evaluate such CO₂ control systems at the proposed supercritical PC facility in a proper top-down BACT process focused on maximum reduction of CO₂.

Sequestration. LG&E must also submit an evaluation of the potential for transporting and sequestering carbon, such as through injection to enhance recovery of oil and gas from sites nearby the Trimble County Station or the construction of a pipeline for injection to other appropriate sites.

iv. The CO₂ BACT analysis must set a stringent output-based standard.

Carbon dioxide emissions are directly related to the amount of coal burned. Because electric generating plants are planned and operated to provide a specific amount of electricity, the more coal burned to produce a megawatt of electricity, the more carbon dioxide emitted. Similarly, the less coal burned the lower the emissions of regulated pollutants. In the top-down BACT analysis for each regulated pollutant, KDAQ must consider output based limits. In short, more efficient electrical generation must be considered in a BACT determination because it is a “production process[] and available method[], system[] and technique[]... for control of each pollutant.” 42 U.S.C. § 7479(3).

As part of the new NSPS standards, U.S. EPA adopted output-based standards as a step towards minimizing inefficient and unnecessarily polluting boilers. In the analysis for the new NSPS standards, U.S. EPA identified that boiler efficiency can vary enormously.²¹ The following table from that same analysis memo and identified as Table 2 describes the range of efficiencies:

¹⁸ 2005 IPCC Special Report on Carbon dioxide Capture and Storage, Technical Summary, at 25. See also Chapter 3 of this report, available at http://arch.rivm.nl/env/int/ipcc/pages_media/SRCCS-final/IPCCSpecialReportonCarbondioxideCaptureandStorage.htm.

¹⁹ *Id.* at 107 (Chapter 3).

²⁰ *Id.*

²¹ See Memo from Christian Fellner U.S. EPA to Utility, Industrial and Commercial NSPS File, *Gross Efficiency of New Units* (February 2005)

Table 2: EIA 2003 Annual Efficiency Values

Percent of Units Operating at or Above Gross Efficiency	Net Efficiency
Top 10%	35.0%
Top 20%	34.0%
Top 25%	33.6%
Top 33%	33.2%
Top 50%	32.0%

U.S. EPA further explained that the highest efficiency subbituminous, bituminous, and lignite facilities are 43, 38, 37 percent respectively. In a paper presented by three U.S. EPA combustion experts at the 2005 Pittsburgh Coal Conference they detailed the enormous difference in the efficiency (i.e., the CO₂ emissions per ton of coal burned) between sub-critical, super-critical, ultra-supercritical and IGCC coal plants.²² Following is Table 2 from that paper:

TABLE 2
THERMAL PERFORMANCE COMPARISONS, IGCC VS. PC PLANTS

Plant Configuration	IGCC Bit Coal	IGCC Sub-Bit Coal	IGCC Lignite	PC Sub-Crit. Bit Coal	PC Sub-Crit. Sub-Bit Coal	PC Sub-Crit. Lignite	PC Sup-Crit. Bit Coal	PC Sup-Crit. Sub-Bit Coal	PC Sup-Crit. Lignite	PC Ultra Sup-Crit. Bit Coal	PC Ultra Sup-Crit. Sub-Bit Coal	PC Ultra Sup-Crit. Lignite
Net Thermal Efficiency, % HHV	41.8	40.0	38.4	35.9	34.8	33.1	38.3	37.9	35.9	42.7	42.1	37.9
Heat Rate, Btu/kWh (HHV)	8,167	8,520	8,897	9,500	9,800	10,300	8,980	9,000	9,500	8,000	8,100	9000
Gross Power, MWe	564	575	591	540	541	544	540	541	544	543	543	546
Internal Power, MWe	64	75	91	40	41	44	40	41	44	43	43	46
Fuel required, lb/h	349,744	484,089	741,963	407,143	537,331	857,954	381,418	539,384	791,288	342,863	485,445	749,624
Net Power, MWe	500	500	500	500	500	500	500	500	500	500	500	500

Legends:

IGCC	Integrated gasification combined cycle
PC:	Pulverized coal
Bit Coal:	Bituminous Coal
Sub-Bit. Coal:	Sub-bituminous Coal
Sub-Crit.	Sub-critical boiler
Sup-Crit.	Supercritical boiler
Ultra Sup-Crit.	Ultra-supercritical boiler
HHV	Higher heating value of coal

²² See Sikander Khan et al, *Environmental Impact Comparisons IGCC vs. PC Plants* (Sept. 2005)

To minimize the emissions of carbon dioxide, KDAQ should insert a permit provision requiring LG&E to maintain a net thermal efficiency at or above the appropriate level from the above Thermal Performance Comparisons table, or set an emission rate limit in pounds per MWh that is based on that efficiency. Such a term would minimize both the emissions of regulated pollutants and the collateral emissions of carbon dioxide.

IV. The Administrator Must Object Because the Permit Lacks MACT Determinations for Mercury and Other Hazardous Air Pollutants From the Main Boiler.

The Revision 3 Title V permit cannot issue because it lacks case-by-case MACT determinations for mercury and other hazardous air pollutants (“HAPs”) from the new main boiler. The purpose of the Clean Air Act’s HAPs program is to force the stringent control of these highly detrimental pollutants because they could “cause, or contribute to, an increase in mortality or an increase in serious irreversible[] or incapacitating reversible[] illness.” New Jersey v. EPA, 517 F.3d at 577 (quoting legislative history of Section 112). Due to the import of controlling HAPs, it is crucial that sources follow correct procedures for identifying, and adopt permit limits reflecting, the maximum achievable control technology (“MACT”). As the U.S. Circuit Court of Appeals for the District of Columbia recently confirmed in New Jersey, electric generating units (“EGUs”) are subject to the case-by-case MACT requirements laid out in Section 112 of the Clean Air Act. 517 F.3d 574 (D.C. Cir. Feb 8, 2008) (mandate issued March 14, 2008). The Title V permit for the Trimble Generating Station therefore must include procedurally and substantively proper MACT limits for mercury and other HAPs.²³

- a. Section 112 prohibits the construction, reconstruction or modification of an electric generating unit that is major source of HAPs without proper case-by-case MACT determinations.

New and modified major sources of HAPs have been subject to Section 112(g) since 2000. On December 20, 2000, the Administrator issued a determination under Section 112(n) that it was “appropriate and necessary” to regulate coal- and oil-burning electric generating units (EGUs) under the HAPs program. *Regulatory Finding on the Emissions of Hazardous Air*

Pollutants From Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,827 (Dec. 20, 2000) ("2000 Determination"). The reason behind the listing decision was that mercury emissions from EGUs, which are the largest domestic source of mercury emissions, present significant hazards to public health and the environment. *Id.* at 79,827. This determination resulted in the listing of such EGUs under Section 112(c). *National Emission Standards for Hazardous Air Pollutants: Revision of Source Category List Under Section 112 of the Clean Air Act*, 67 Fed. Reg. 6521, 6522, 6524 (Feb. 12, 2002). In rejecting the U.S. EPA's subsequent attempt to "de-list" coal-fired EGUs, *New Jersey*, 517 F.3d at 583, the D.C. Circuit affirmed the applicability of these requirements.

Furthermore, the Section 112 listing established that construction or modification of a coal-fired unit like TC2 is subject to the case-by-case MACT requirements of Section 112(g). See 42 U.S.C. § 7412(c)(1) (Administrator shall publish a list of all categories and subcategories of major sources of HAPs); § 7412(g)(2) (requiring MACT of new and modified major sources of HAPs, which is determined on a case-by-case basis where the Administrator has not established emission limitations). While U.S. EPA proposed a numeric standard for coal-fired EGUs in January 2004, *Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units*, 69 Fed. Reg. 4754 (Jan. 30, 2004), this standard was never finalized. The U.S. EPA instead announced its decisions to de-list EGUs from Section 112 in 2005, *Revision of December 2000 Regulatory Finding*, 70 Fed. Reg. 15,994, 16,002-08, 16,032 (Mar. 29, 2005), and to regulate mercury emissions from coal-fired EGUs under Section 111, *Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units*, 70 Fed. Reg. 28,606, 28,610, 28,624-3 (May 18, 2005). These subsequent actions were vacated in *New Jersey*, reinstating the listing under 112(c). Therefore, because U.S. EPA has not promulgated final emission standards for EGUs, MACT determinations for new and modified sources following the 2000 Determination must be made on a case-by-case basis. See 42 U.S.C. § 7412(g)(2)(A) and (B); 40 C.F.R. 63.40(c); Memorandum from John Seitz, U.S. EPA, to Regional Air Directors, at p. 1 (Aug. 1, 2001).

²³ Petitioners properly raise this issue in the present petition because the grounds for Petitioners' objection arose on February 8, 2008, after the close of the Revision 3 public comment period in the fall of 2007. See 42 U.S.C. § 7661d(b)(2).

In sum, new and modified EGUs have been subject to the CAA's HAPs program since December 2000, and all new and modified EGUs as of 2000 forward must have proper case-by-case MACT determinations.

b. MACT limits must be included in the Title V Permit.

A Title V permit must include "enforceable emission limitations and standards" and other provisions "as are necessary to assure compliance with applicable requirements of [the Clean Air Act]." 42 U.S.C. 7661c(a). As put forth above, case-by-case MACT determinations are required for construction, reconstruction, and modification of EGUs. These requirements are indisputably applicable requirements under the Clean Air Act, and thus must be incorporated into a source's Title V permit. See 40 C.F.R. 63.43. The Revision 3 permit lacks proper MACT determinations. See, e.g., Exhibit 3, Rev 3 Final Permit, at p. 27 (applicable requirements for boiler omits 40 C.F.R. Part 63) and 29 (mercury limit assures compliance with New Source Performance Standards).

c. A case-by-case MACT determination was never made for the new main boiler.

In its 2004 application for a combined PSD/Title V permit, LG&E recognized that Trimble County Generating Station is an existing major source of HAPs subject to MACT, and that HAP emissions will occur from the construction of TC2 as a result of the combustion process. Exhibit 7, Rev 2 Application Section 5, "MACT Analyses," p. 5-1. LG&E also specifically recognized the applicability of Section 112(g) to the TC2 project. See Exhibit 8, Rev 2 Appendix I, Section 11, "HAPs MACT," p. I-47 (under Section 112(g), facilities must perform a case-by-case MACT determination for new and modified coal and oil fired EGUs). LG&E purported to submit a MACT analysis for the TC2 boiler in its application. See Exhibit 8, Rev 2 Appendix I, I-47 to I-53. The analysis concludes that the use of selective catalytic reduction, a fabric filter, a wet scrubber and wet ESP will be "very effective in reducing mercury emissions for the bituminous fuel" to be burned at TC2. Id. at I-48. According to LG&E, the proposed controls represent the "highest efficiency mercury control of any other currently available systems" and will achieve the U.S. EPA's 2004 proposed MACT emission rates of 6.0×10^6 lb/MWh_n for bituminous fuel and 20.0×10^6 lb/MWh_n for subbituminous fuel. Id. at I-49.

KDAQ, however, never followed proper procedures by making a formal MACT determination and incorporating the proper MACT limit in the Permit. Instead, KDAQ merely stated in the unenforceable Revision 2 Statement of Basis that the

information provided in the permit application and in recent U.S. EPA rulemakings *indicates* that the emission limitation being proposed for Emissions Unit 31 is not less stringent than the emission limitation achieved in practice by the best controlled similar source and reflects the maximum degree of reduction of emissions of HAPs that the Division determines is achievable, *taking into account applicable regulatory considerations*.

Exhibit 11, Rev 2 SOB at p. 11 (emphases added). Due to the legal challenges over the U.S. EPA's mercury rulemakings, the Division "retained the MACT analysis in the permit *discussion*" and cited that the "mercury limit contained in this permit is significantly lower than that required by NSPS." *Id.* (emphasis added). Nowhere in the Permit's table of applicable requirements did KDAQ include state or federal MACT requirements. *See id.* at 26 to 28 (SPC-fired boiler); Exhibit 3, Rev 3 Final Permit at p 27.

- d. The alleged MACT analysis is procedurally and substantively flawed, and thus the Permit lacks the required MACT determination.

Not only are hazardous air pollutant limits not incorporated as applicable MACT requirements, but the supposed MACT analysis provided by LG&E and affirmed by KDAQ is inadequate on several other procedural and substantive grounds. The analysis misapplies the MACT two-step process that "*shall* govern preparation" of the MACT application and the permitting authority's review. *See* 40 C.F.R. 63.43(d) (emphasis added). As U.S. EPA regulations outline, case-by-case MACT first requires the applicant and the authority to determine the emissions control level achieved by the "best controlled similar source" for *each* of the HAPs that the source will emit. *See National Lime Association v. EPA*, 233 F. 3d 625, 634 (D.C. Cir. 2000); 40 C.F.R. 63.43(d)(1). This level represents the MACT "floor" that the applicant must meet regardless of cost or other factors. *See National Lime*, 233 F. 3d at 629. Next, the applicant and authority must determine whether it is possible to achieve a more stringent level of control, taking into account cost and other feasibility issues. *See* 40 C.F.R. 63.43(d)(2). This level of control is referred to as a "beyond the floor" standard. *National Lime*,

233 F. 3d at 629. LG&E and KDAQ, in their supposed MACT analysis and determination, failed to conduct both proper “floor” and “beyond the floor” analyses.

i. The Applications do not contain a MACT floor analysis.

The final permit contains a mercury limit of 13×10^{-6} lb/MWh. Exhibit 3, Rev 3 Final Permit at 29, Condition B2(l). This limit is based on the January 2004 Utility Boiler MACT proposed by U.S. EPA. Exhibit 8, Rev 2 Appendix I, I-49; Exhibit 11, Rev 2 SOB at 11 (citing 2004 proposed standard). The Trimble mercury limit was calculated for three coals: Performance Coal (10.2×10^{-6} lb/MWh), Test Coal B (13.0×10^{-6} lb/MWh), and Test Coal A (6.0×10^{-6} lb/MWh). Rev. 2 Ap., p. I-49, Table 11-1. The highest mercury value of 13.0×10^{-6} lb/MWh, for Test Coal B, was then selected as the permit limit for mercury. Test coal B is a blend of 50% bituminous (6.0×10^{-6} lb/MWh) and 50% subbituminous (20×10^{-6} lb/MWh) coal. Thus, LG&E calculated the limit as a weighted emission limit from: $0.5 \times 20 + 0.5 \times 6.0 = 13.0 \times 10^{-6}$ lb/MWh. This is not a proper “floor analysis” for a new source for numerous reasons, set out below.

First, the 2004 Application leaves out any specific data on levels achieved at other similar sources. The so-called MACT analysis instead simply lists several large studies and concludes that the *equipment* proposed has the “highest efficiency mercury control of any other currently available system.” Exhibit 8, Rev 2 Appendix I at I-49. Identifying the equipment associated with the highest level of control achieved is not the same as identifying actual levels achieved, in terms of percent reduction and outlet emissions, at other similar sources. The only discussion of levels achieved at other plants occurs with respect to the wet FGD, *id.* at I-48 (listing only percent reductions and not outlet emissions), not the multiple pieces of control train equipment that LG&E identifies as contributing to mercury removal. According to the Application, U.S. EPA defines a similar source as one that “has comparable emissions, and a design and capacity structure, such that emissions from that source can be controlled using the same technology as applied to the given source.” Exhibit 7, Rev 2 Application Section 5, at 5-1. The plain language of this provision requires a case-by-case MACT analysis to identify similar sources, the levels of control being achieved at those sources, and the best level of control from among those sources. The Application fails entirely to identify the universe sources similar to TC2, let alone the

emissions levels achieved at those sources, in violation of both the MACT requirement and Title V. See 40 C.F.R. 63.43d(1); 40 C.F.R. 70.5(c)(3) and (5); 401 KAR 52:020 Section 5(3) and (6).

Second, instead of being based on the best controlled similar source, the limit comes from a draft rulemaking that was never promulgated. This Rulemaking, 69 Fed. Reg. 4652 (Jan. 30, 2004), also generated the largest number of comments ever received by U.S. EPA on a proposed rulemaking because it strayed so far from what was then known and from sound science. In particular, it used a novel concept of variability to artificially inflate the MACT standard using questionable statistical techniques and making a mockery of the plain language of “best controlled similar source.” It is highly improper to take the best controlled similar source and then jack it up using statistical hocus pocus so that it is substantially higher than the best controlled similar source. The proposed mercury standard here is expressed as a 12-month rolling average. This very long term average is more than adequate to address any variability in the data.

Setting aside the methodological flaws in the 2004 proposed standard, the standard alone cannot carry the alleged case-by-case MACT limits here. U.S. EPA regulations make clear that consideration of such a proposed MACT standard is a necessary but not sufficient component of a case-by-case MACT determination. See 40 C.F.R. 63.43(d)(4).²⁴ Meeting a proposed categorical standard is not sufficient because the bases for such a standard and a case-by-case determination are not the same. The former must apply across, and therefore takes into account factors at, numerous plants in a category or subcategory, while the latter requires an assessment of what is achievable at a particular plant based on plant-specific factors.²⁵ The draft rulemaking floor was based on the best-performing 12% of existing sources for categories and subcategories with 30 or more sources. 69 Fed. Reg. at 4668. Trimble Unit 2 is a new unit, and a case-by-case analysis for a new unit after the MACT “hammer” has fallen defines the floor as the best controlled similar source. 40 C.F.R. 63.43(d)(1). The mercury emission limit for the best-

²⁴ “If the Administrator has...proposed a relevant emission standard pursuant to section 112(d)...then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard...”

²⁵ See 42 U.S.C. 7412(d)(2) (emissions standards under Section 112(d) are based on what is achievable for new sources in a category or subcategory); 42 U.S.C. 7412(d)(3) (“the maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source”); 42 U.S.C. 7412(g)(2)(B) (MACT for construction of a major source of HAPs is made on a case-by-case basis where the Administrator has not established a category or subcategory limitation under Section 112(d)); 40 C.F.R. 63.42(c)(2) (case-by-case MACT determination requirement); 40 C.F.R. 63.43(d)(2).

controlled similar source is 10% lower than the average of the best-performing 12% (0.1062/0.118). Since the EPA missed its deadline to promulgate a mercury MACT standard, the hammer has fallen and a case-by-case analysis must be done.

Third, the new unit will be capable of burning a wide range of fuels, including 100 percent bituminous coal. Exhibit 7, Rev 2 Application, Section 1, at 1-1 and 1-2 (listing performance coal (70:30 blend of bituminous and subbituminous coal), test coal A (100% bituminous coal), and test coal B (50:50 blend of bituminous and subbituminous coal)). The best performing similar source for mercury is a bituminous fired boiler. See, e.g., Exhibit 12, Field Testing of Mercury Control Technologies for Coal-Fired Power Plants, at 1-2 (plants burning subbituminous coal show significantly lower mercury capture than similarly equipped bituminous plants). The mercury permit limit, however, is the maximum for three proposed coals. Thus, clearly, the best performing similar source has not been selected. The coal that yields the lowest mercury limit is the best controlled similar source, not the coal that yields the highest limit.

Fourth, notwithstanding the foregoing, the EPA's own data underlying the proposed mercury MACT standard demonstrates that the Trimble mercury permit limit of 13×10^{-6} lb/MWh is far too high. The EPA concluded that the best-controlled similar source for bituminous-fired units was 0.1062 lb/TBu. 69 Fed. Reg. at 4673. Using EPA's formula for converting this to lb/MWh and assuming an old unit (for the floor), this converts to 1.13×10^{-6} lb/MWh,²⁶ or over ten times lower than proposed for Trimble Unit 2. The EPA's analysis for subbituminous-fired units identified the best-controlled similar source as 0.4606 lb/TBu. Ibid. This level converts to 4.91×10^{-6} lb/MWh, assuming a heat rate of 10,667 Btu/kw for an old unit. 69 Fed. Reg. 4652, 4668. Thus, the best-controlled similar source, which fires bituminous coal (one of the fuels proposed for Trimble Unit 2, Test Coal A), is meeting 1.13×10^{-6} lb/MWh. The MACT limit must be no higher than this. 40 C.F.R. 63.43(d)(1).

Fifth, setting aside the misuse of EPA's nationwide MACT analysis and even assuming its validity, the analysis is substantially dated, relying on what was known prior to January 2004. Millions of dollars have been spent in the intervening four to eight years to develop and deploy commercial Hg control technologies. Hundreds of studies have been published and are found on websites such those of ADA-ES and NETL, among others. The Division must collect and

²⁶ $(0.1062 \text{ lb} \times 10\text{-}12 \text{ Btu})(10,667 \text{ Btu/kw})(1000 \text{ kw/MW}) = 1.13 \times 10^{-6} \text{ lb/MWh}$.

analyze this more recent data and make a case-by-case MACT determination for Trimble Unit 2 before it issues a final Title V permit. For example, there are two units currently operating with commercial PAC systems achieving 90 percent mercury control, on top of that achieved by the balance of the pollution control train. See Exhibit 13, “Results of a Long-Term Mercury Control Project for a PRB Unit with an SCR, Spray Dryer and Fabric Filter” and “TOXECON™ Clean Coal Demonstration for Mercury and Multi-Pollutant Control.” The floor analysis conducted by LG&E and KDAQ on remand must consider this and other current data. Indeed, Congress intended that MACT determinations be done based on recent data, since Congress mandated that they be reconsidered at least every eight years. 42 U.S.C. § 7412(d)(6). It is worth noting that the 1999 data relied upon by LG&E and KDAQ in its 2004 application is now more than eight years old.

Finally, the Trimble analysis only established a MACT limit for mercury. A case-by-case MACT analysis, including a floor analysis, must be performed for all HAPs emitted by the source. National Lime, 233 F. 3d 625 (MACT requirements apply to each of the HAPs that a source will emit).

- ii. LG&E and KDAQ failed to include a beyond the floor analysis by providing an erroneous numeric limit, omitting consideration of optimization techniques and use of activated carbon injection, and applying the wrong standard.

Regardless of whether other similar sources were achieving a lower limit in practice, LG&E and KDAQ erred by botching the second step of the case-by-case MACT analysis required under 40 C.F.R. 63.43(d)(2). The error in the second step was fourfold. First, LG&E omitted critical fuel mercury information from the application. Second, LG&E and KDAQ relied on a limit that does not even reflect what is achievable by operating the proposed conventional pollution controls. Third, the applicant and agency omitted any analysis of techniques for enhancing mercury capture from the proposed control train and completely failed to discuss use of activated carbon. Fourth, KDAQ applied an improper standard in making its “beyond the floor determination.” For all of these reasons, the original mercury limit is not MACT.

The fuel analysis data in Revision 2 does not contain any data for mercury. See Exhibit 8, Rev 2 Appendix B. The mercury content of the coal must be known to determine the degree of reduction that can be achieved for Trimble Unit 2. In addition, the proposed mercury limit does

not represent what is achievable by operating the proposed pollution controls. MACT is a limit representing the maximum degree of reduction in emissions, not a set of controls. 40 C.F.R. 63.41. The EPA's ICR investigations, which LG&E and KDAQ relied upon in setting the mercury limit, see Exhibit 14, Rev 3 Appendix I, p. I-49²⁷, demonstrate that units with controls less stringent than proposed for Trimble Unit 2, using only a fabric filter and wet scrubber, achieve on average 98% mercury control. See Exhibit 12, Field Testing of Mercury, Table 1. As discussed below, information not supplied to KDAQ or made available during permit review demonstrates that the proposed limit corresponds to only 82 percent to 95 percent, which is not the maximum degree of reduction that is achievable with the proposed control train. The Revision 2 pollution control train additionally includes a WESP designed to remove 95 percent of the mercury. The proposed mercury limit represents only 82 percent to 95 percent control, relative to the economizer outlet. Thus, the proposed limit assumes a lower control efficiency than EPA demonstrated to be achieved at existing plants. See Exhibit 15, LGE-0021817, Letter from Laki Vogiatzis, E.ON, to Noel Lively, LG&E, June 11, 2004, at 21821-34. Thus, the proposed mercury limit is not even as aggressive as EPA's own test data demonstrate the equipment can achieve.

Moreover, simply operating the air pollution control train put forth by LG&E does not result in the maximum degree of reduction achievable by the source. MACT for new sources is defined as:

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.

40 C.F.R. 63.41. This broad definition encompasses optimization and enhancement techniques. At the time of the application and Revision 2 draft permit issuance, numerous techniques existed for enhancing mercury reduction from "co-benefit" of other controls. These techniques include fuel blending, fuel additives, combustion controls, and oxidation upstream of the FGD (with

²⁷ Electric Power Version 3.01 "Case-by-Case Tool" mercury estimation program, 1999 Information Collection Request ("ICR") data and the 2002 U.S. EPA report "Control of Mercury Emissions from Coal-Fired Electric Utility Boilers: Interim Report" confirm that the proposed technologies provide the "highest efficiency mercury control of any other currently available systems."

chemical oxidants and oxidation catalysts). LG&E and KDAQ nowhere mention these available enhancement techniques in their mercury analyses, either in terms of proposing them as available controls or giving legitimate reasons for rejecting them, and the Permit does not require them as controls or operating limits.

Perhaps most importantly, both LG&E's and KDAQ's discussions completely omit an available and highly effective add-on control for mercury, namely, activated carbon injection ("ACI"). A carbon injection system is capable of achieving significant reductions in mercury emissions, on top of the control achieved by the balance of the pollution control system. ACI was available and in use at numerous similar facilities at the time of the Revision 2 permit application and issuance. These facilities showed significant increases in mercury reduction from the use of ACI. See, e.g., Exhibit 12, Field Testing of Mercury Control Technologies (reporting results of various carbon injection options on control of mercury at plants with various pollution control trains analogous to TC2).

Some of this data on ACI is reviewed in correspondence from E.ON to LG&E in support of air permitting. Exhibit 15, LGE-0021817, at 0021833-34. LG&E did not, however, share it with KDAQ at the time of permitting nor consider it in the mercury analysis. The MACT analysis in the application and Statement of Basis do not mention ACI, let alone list information on feasibility, costs or other non-air quality health and environmental impacts and energy requirements²⁸ associated with ACI that would weigh against its inclusion in the MACT determination. See Exhibit 8, Rev 2 Appendix I-47 to I-50; Exhibit 11, Rev 2 SOB at 10-11. Essentially, by omitting ACI, LG&E and KDAQ completely ignored the requirement to assess whether a "beyond the floor" limit is feasible.

The above techniques and ACI were available for use on a plant with the air pollution control train proposed by LG&E. In fact, it is clear from other parts of the application and contemporaneous correspondence that LG&E was aware of and in fact anticipated using "activated carbon injection for mercury control" back in 2004. Exhibit 8, Rev 2 Appendix C, C-14 to C-15; Exhibit 15, LGE-0021817, at 1121833-34. The applicant and the agency provided no technical or other reasons why the enhancement techniques and ACI could not be used for

²⁸ See 40 C.F.R. 63.43(d)(2) (MACT emission limitation and control technology shall achieve the maximum degree of reduction in emissions of HAP which can be achieved by utilizing proposed and approved control technologies, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction).

additional mercury control. In other words, they did not answer the required step two question of whether a lower level is feasible. Nor does the limit's relationship to other proposed standards, such as those under Section 112(d), see Section IV.d.i (MACT floor), infra, or invalid U.S. EPA's 2005 proposed Clean Air Mercury Rule, see Section IV.d.iii (wrong standard), supra, suffice for Section 112(g) purposes.

Finally, as stated above with respect to step one, a MACT step two analysis must be done now based on current information.

- iii. KDAQ applied the wrong standard under case-by-case MACT step two.

In addition to erroneously neglecting available controls, KDAQ injected an inappropriate standard into the "beyond the floor" process. Rather than considering feasibility and other cost and environmental issues in its determination, see 40 C.F.R. 63.43(d)(2), KDAQ found the limitations feasible "*taking into account applicable regulatory considerations.*" Exhibit 11, Rev 2 SOB at 11 (emphasis added). The agency does not make clear what it is referring to in this phrase, but it is clearly not the list of factors required by the applicable regulation. Presumably, KDAQ was referring to the U.S. EPA's strategic decision in 2005 to delist EGUs from Section 112 and regulate EGU HAPs under Section 111 because of the reductions in mercury achieved from compliance with other regulatory obligations. In other words, "taking into account" these "regulatory considerations" meant that KDAQ was ignoring the requirements of Section 112 in favor of a less-stringent scheme under Section 111. Those "regulatory considerations," however, were struck down by the courts, and are therefore wholly unacceptable under Section 112(g), which requires a case-by-case analysis of the maximum degree of reduction achievable taking costs and other environmental and energy considerations into account. As a result, the Permit's mercury limit does not constitute MACT and the Administrator must object.

- iv. The current proposal to add PAC injection demonstrates that the prior mercury limit was not MACT

LG&E now proposes to add powdered activated carbon (PAC) injection ahead of the baghouse, Exhibit 16, Rev 3 Application at 2-8 to 2-9, Exhibit 14, Rev 3 Appendix A at p. 4N and 5N, "to ensure compliance with the Unit 2 mercury emission rate," Exhibit 16, Rev 3

Application, at 2-8. Whether or not PAC was feasible at the time of the Revision 2 permitting, as it clearly was, this supposed revision is a post hoc admission that the original limit was not achievable on a continuous basis with the originally-proposed control technology. Such a proposal should trigger a *de novo* re-evaluation of the MACT determination. The Revision 3 Application does not disclose the control efficiency of the proposed PAC system nor the carbon injection rate. Thus, it is not possible to determine if the Revision 3 proposal and retained Revision 2 mercury limit satisfy the MACT requirement of maximum degree of reduction, in violation of Title V. See Section III.d; 401 KAR 52:020 Section 5 (1),(3),(4) & (6).

e. A proper MACT determination must be made on remand

For all of the above reasons, the mercury limit in the Permit does not constitute MACT and the Administrator must object. On remand, LG&E must provide an analysis based on current information that includes consideration of the enhancement techniques discussed above, PAC and/or other similar add-on controls, and the Revision 3 lime injection system, see Section V.c.iii, *supra*, in its calculation of the appropriate limit. KDAQ, in turn, must make a formal MACT finding applying the correct case-by-case MACT standards and list the MACT regulations in the Permit as applicable requirements. These requirements apply for other HAPs in addition to mercury.

V. The Administrator Must Object Because the Permit Lacks Proper BACT Limits.

a. PSD Determinations are Properly at Issue in This Petition.

The prior PSD determinations impacted by the Revision 3 changes are properly at issue in this Petition, as a contrary holding would uphold improper Revision 2 BACT determinations and allow permit applicants to game the PSD process. Title V clearly gives U.S. EPA the authority to object to a permit that is not in compliance with the Clean Air Act's requirements, 42 U.S.C. 7661d(b), including the requirement to obtain a proper PSD permit, see 42 U.S.C. 7475. This authority is not limited to newly applicable requirements or new provisions and analysis. In addition, the Clean Air Act's Title V and Kentucky regulations give U.S. EPA the authority to reopen and revise or revoke a permit where the agency determines that doing so "is necessary... to assure compliance with applicable requirements." 40 C.F.R. 70.7(f)(iv); 401 KAR 52:020; United States v. East Kentucky Power Cooperative, Inc. 498 F. Supp. 2d 1010,

1012 E.D. KY 2007) (citing 40 C.F.R. 70.7(f) that “EPA may initiate administrative proceedings to reopen and revise the permit.”) The Administrator therefore has the authority, and indeed the duty, to object to the current permit due to inadequacies in the netting and BACT determinations highlighted by and stemming from the Revision 3 changes. See 42 U.S.C. § 7661d(b) and 7475(a)(1) and (4) (source must have a construction permit that includes required BACT limits); see also Alaska, 540 U.S. at 484-85. The same duty extends to improper BACT limits carried forward from Revision 2 into subsequent Title V permits. See id.; 40 C.F.R. 70.7(f); East Kentucky Power.

b. The Administrator Must Object Because the Netting Analyses for NO_x and SO₂ on Which the Permit Is Based Are Not Supported.

Where a permit’s netting analysis is not adequately supported, and available information demonstrates that the project will result in a significant net emissions increase, the Administrator must object to the permit’s omission of a BACT limit. The Revision 2 permit did not undergo full Prevention of Significant Deterioration (“PSD”) review for NO_x and SO₂, as KDAQ found that the proposed unit netted out of PSD for these pollutants. Petitioners here note their continuing concerns with the insufficiency of the original netting determinations. See Exhibit 5, Rev 2 Redacted briefs.²⁹ Changes in the Revision 3 permit are relevant to the NO_x netting and thus must be fully supported to justify the continuing exemption from full PSD review. They are not, and so the Administrator must object. KDAQ itself recognized that Revision 3 changes affecting the project’s Potential-to-Emit require revisiting the netting calculations. See, e.g., Exhibit 17, Rev 3 SOB p. 5.

The emissions margin supporting KDAQ’s determination that Revision 2 “netted out” of PSD for NO_x was two tons per year (netted emissions of 38 tons per year versus the PSD significance level of 40 tpy). See Exhibit 11, Revision 2 SOB at 6. Given this small margin, it is critical that any subsequent changes in predicted NO_x emissions be clearly supported. Here, calculations associated with changes in NO_x emissions are lacking, calling into serious question the continued exemption of the project from PSD for NO_x.

i. Auxiliary Boiler Changes

²⁹ Opening brief at 19-28, Response at 5-15, Reply at 2

LG&E proposes to more than double the size of the new auxiliary boiler (from 40 mmBtu/hr to 100 mmBtu/hr) and double the operating hours (from 1,000 to 2,000 per year). Allegedly, the shutdown of the three existing auxiliary boilers will in large part offset the increased emissions from the changes to the new auxiliary boiler. However, the application does not provide complete, detailed emissions calculations evidencing this trade-off. See Exhibit 14, Rev 3 App. Appendix C, Performance Information (including a table listing only predicted emissions figures), and Appendix D, Emissions (results of calculations). The application must include emissions information and calculations supporting the emissions information. 401 KAR 52:020 Section 5(3), 40 C.F.R. 70.5(c)(3). The application is incomplete without this information and therefore the Administrator must object.

ii. Emergency Diesel Generator

Revision 3 proposes a reduction in the number of hours of annual operation for the emergency diesel generator. Exhibit 17, Rev 3 SOB at p. 2. Ostensibly, the decrease in NO_x emissions associated with the reduced hours contributes to off-setting the increase in NO_x emissions from doubling of the allowed auxiliary boiler operation hours. The permit materials, however, again fail to provide clear support for the continued “netting out” of PSD for NO_x. The materials do not include supporting calculations for NO_x from the emergency diesel generator. Whether the diesel generator qualifies for RICE MACT for hazardous air pollutants is immaterial to the equipment’s meeting PSD requirements. The permit materials must clearly document the NO_x emissions from the diesel generator and show how these emissions figure into the netting calculations, including but not limited to whether the reductions from the diesel generator off-set increased emissions from the auxiliary boiler. 40 C.F.R. 70.5(c)(3).

c. The Administrator Must Object Because the Permit Contains Improper BACT Limits for Various Pollutants Based on Addition of Controls in Revision 3.

The applicant is now proposing to install a dry ESP and lime injection that it originally anticipated installing for, among other things, control of particulate matter and SO₃ respectively.³⁰ See Exhibit 8, Rev 2 Appendix C. This is direct evidence that the original BACT determinations for these pollutants were in error. Not revisiting the Revision 2 BACT

³⁰ The new unit was required to undergo full PSD review for PM and sulfuric acid mist in Revision 2.

determinations here would permit the applicant to withhold certain design components when the PSD process initially takes place, then propose additional control equipment further down the road (in this case, prior to initial startup and operation) and escape BACT limits based on that equipment. Such an outcome would negatively impact not only the individual facility, but also future facilities undergoing PSD review that cite to the permit's limits as representing BACT.

i. BACT at TC2 Consists of a Combination of Controls for Particulate Matter and Sulfuric Acid Mist.

The BACT analysis for particulate matter ("PM/PM₁₀") and sulfuric acid mist ("SAM") must be done again in order to account for the addition of control options in Revision 3. The addition of control options to TC2 in Revision 3 invalidates the Revision 2 BACT limits, and requires the applicant and KDAQ to reassess BACT by conducting full, top-down BACT analyses for PM/PM₁₀ and SAM accounting for emission reductions from the combined control options. Under the Clean Air Act and Kentucky air quality regulations, BACT is defined as:

an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.

42 U.S.C. § 7479(3); 40 C.F.R. 52.21(b)(12); 401 KAR 51:001 Sec. 1(25). In sum, BACT breaks down into assessing the technical and economic feasibility of achieving the maximum degree of reduction in a pollutant. The statutory and regulatory definitions of BACT do not limit BACT to a single control technique, but require a comprehensive assessment of available methods, systems and techniques in light of, among other things, economic cost. See id.; see also U.S. EPA, New Source Review Workshop Manual (1990) ("NSR Manual,") Section IV.A.³¹ That an applicant proposes to use multiple control options presumptively establishes that the options are technically and economically feasible. Thus, to reflect the "maximum degree of reduction"

³¹ "The objective in step 1 is to identify all control options with potential application to the source and pollutant under evaluation. Later, one or more of these options may be eliminated from consideration because they are determined to be technically infeasible or to have unacceptable energy, environmental or economic impacts."

especially where, as here, the applicant itself proposes use of multiple control options, a proper BACT emission limit must reflect the greatest level of reduction achievable by the combined options.

- ii. BACT for PM/PM₁₀ from the Boiler should be based on use of the proposed dry ESP and PJFF.

Permit contains an operating limit of “PJFF” (pulse jet fabric filter) as BACT for PM/PM₁₀ on Unit 31, the new pulverized coal boiler. Exhibit 3, Rev 3 Final Permit p. 27, Con. 1. In addition, the emission limitations associated with this operating limit are (a) for filterable and condensable PM/PM₁₀, 0.018 lb/mmBtu based on the average of three one-hour tests, and (b) for filterable PM, 0.015 lb/mmBtu based on a three-hour rolling average. Exhibit 3, Rev 3 Final Permit, Cond. B.2(b), p. 28. These limits are not BACT for PM/PM from the TC2 boiler.

The applicant is proposing to install “voluntarily” a dry electrostatic precipitator (DESP) upstream of the fabric filter “to collect saleable fly ash rather than achieving PM emission control.” Exhibit 17, Rev 3 SOB at p. 23. According to KDAQ, “[a]ny PM emissions control [from the addition of the DESP] will be an insignificant coincidental benefit.” *Id.*; see also Exhibit 16, Rev 3 Permit App. at 2-10 (addition of the DESP will not affect the filterable particulate or filterable/condensable limits from Revision 2). The permit thus reapplies the same BACT limits for filterable and filterable/condensable particulate matter as the Revision 2 permit, which was not based on use of a DESP. These limits are unsupported for two reasons.

First, the applicant’s and KDAQ’s position appears to be that particulate matter BACT limits on the boiler may be set properly on the basis of the fabric filter’s performance alone. This assumption is incorrect as a matter of law. As stated above, BACT under federal and Kentucky law is an emission limitation based on the maximum degree of reduction achievable through various control options, taking into account technical and economic feasibility. 42 U.S.C. § 7479(3); 40 C.F.R. 52.21(b)(12); 401 KAR 51:001 Sec. 1(25). A DESP is used in part for control of particulate matter. See, e.g., Exhibit 16, Rev 3 App. at 2-10 (DESP to remove fly ash). The fact that LG&E itself has proposed to install the DESP means that the DESP in conjunction with a fabric filter is a technically and economically feasible control strategy for particulate matter from the boiler. The company’s intent in installing a control technology is not cognizable under the definition of BACT, and cannot be used to excuse a failure to base BACT on all technically and economically feasible control options.

Second, contrary to KDAQ's and LG&E's factual assertions, use of a DESP in conjunction with a fabric filter is likely to result in appreciably lower particulate matter emissions than a fabric filter alone. This new ESP will be designed to remove greater than 95 percent of the PM₁₀ and mercury. Exhibit 14, Rev 3 Appendix A, DEP7007N, p. 5N. The downstream fabric filter baghouse, which is part of the original pollution control train, is being designed to remove 99.8 percent of the PM and 99.2 percent of the PM₁₀. Id. at p. 7N of 14N; see also Exhibit 8, Rev 2 Appendix A, p. 8N of 15N. The combined control efficiency of these two devices would thus be 99.99³² percent for PM and 99.96 percent for PM₁₀³³. This addition of control equipment results in much lower – a hardly insignificant order of magnitude lower – PM and PM₁₀ emissions.

The controlled PM/PM₁₀ BACT emission limits for the Unit 2 boiler are 0.018 lb/MMBtu, or 567.4 tons per year total PM₁₀, and 0.015 lb/MMBtu filterable PM, based on using just the baghouse. See Exhibit 7, Rev 2 Application Section 2, p. 2-13 Table 2-1 and Exhibit 3, Rev 3 Final Permit, Cond. B.2(b), p. 28. However, if the additional greater than 95 percent PM/PM₁₀ control efficiency from the new dry ESP is considered, the controlled PM/PM₁₀ emissions from the boiler drop from 567.4 tons per year to 28.4 tons per year.³⁴ The corresponding BACT PM/PM₁₀ emission limit would drop from 0.018 lb/MMBtu to 0.001 lb/MMBtu and the filterable PM limit from 0.015 lb/MMBtu to 0.00075 lb/MMBtu.³⁵

These are significant differences that were achievable at the time the initial permit for Unit 2 was issued. Even lower PM/PM₁₀ emissions should be achievable, as these calculations do not consider the wet ESP, which removes additional PM/PM₁₀ beyond that discussed here. See Exhibit 14, Rev 3 Appendix A, p. 10N of 14N. Experience in the field with a similar configuration consisting of two ESPs in sequence to control particulate matter shows very low opacity, typically in the three percent range.³⁶ Thus, given the addition of an ESP ahead of the fabric filter as anticipated in 2004, the Permit's BACT limits for PM/PM₁₀ clearly did not and do not represent emission limits based on the maximum degree of control that is achievable.

³² Combined control efficiency for PM = $100(1 - [(1 - 0.95)(1 - 0.998)]) = 99.99$ percent.

³³ Combined control efficiency for PM₁₀ = $100(1 - [(1 - 0.95)(1 - 0.992)]) = 99.96$ percent.

³⁴ Uncontrolled PM emissions = $567.4/(1-0.998) = 283,700$ ton/yr. Controlled PM emissions based on an ESP plus baghouse for PM = $283,700(1-0.9999) = 28.4$ ton/yr. Uncontrolled PM₁₀ emissions = $567.4/(1-0.992) = 70,925$ ton/yr. Controlled PM₁₀ emissions based on an ESP plus baghouse for PM₁₀ = $70,925(1-0.9996) = 28.37$ ton/yr.

³⁵ Revised BACT PM₁₀ limit = $(0.018 \text{ lb/MMBtu})(28.37/567.4) = 0.001$ lb/MMBtu.

³⁶ See N. Sarunac, et al., "Field Experience with Mercury Monitors," Power, August 2007, p. 54 (article available at http://www.powermag.com/powerweb/archive_article.asp?a=52-SR_MM&y=2007&m=august)

In contrast to this analysis, neither LG&E nor KDAQ provide clear evidence that the level of control using a dry ESP and a fabric filter will not be greater than a fabric filter alone, but instead make only conclusory statements. The applicant and agency must support their assertions with full, transparent engineering calculations. In the absence of such calculations, the PM BACT limits are unsupported.

Finally, even if the additional “benefit” of a DESP is small as asserted by KDAQ, which it is not, this benefit cannot be considered “coincidental.” Instead, any additional PM control from the dry ESP must be accounted for in a lower BACT limit.

- iii. BACT for SAM from the Boiler should be based on use of WESP in combination with the proposed hydrated lime injection.

The same argument applies to BACT for SAM. LG&E is proposing to use hydrated lime injection ahead of the fabric filter baghouse, allegedly to condition the fabric filters and to control SO₃ (i.e., SAM).³⁷ Exhibit 16, Rev 3 Application Section 2, p. 2-9. According to KDAQ, hydrated lime “has not been proposed for as [sic] an alternative SO₃ emission reduction technology.” Exhibit 17, Rev 3 SOB at p. 2. Whether or not the applicant is proposing hydrated lime as a SO₃ emission reduction technology is immaterial to whether reductions in SO₃ from use of hydrated lime should be included in the BACT determination for SAM. The application states that hydrated lime injection may be necessary “to help... control SO₃ emissions.” Exhibit 16, Rev 3 App. at p. 2-9. A purpose of hydrated lime is to remove SO₃. *Id.* (lime injection system used to control SO₃). The 2004 Revision 2 application anticipated using lime injection for control of SO₃. Exhibit 8, Rev 2 Appendix C, C-14 to C-15.

Clearly, adding lime before the baghouse enhances the overall removal of SAM. As an initial matter, the Revision 3 application does not disclose the proposed SO₃ removal efficiency, instead reporting “TBD” or to be determined. See Exhibit 14, Rev 3 Appendix A, p. 6N of 14N. Thus the Application is incomplete and thus should not serve as a basis for issuing a revised permit. 40 C.F.R. 70.5(c)(3) and (5), KAR 52:020 Section 5.

The existing pollution control train includes a wet electrostatic precipitator (WESP) designed to remove greater than 95 percent of the H₂SO₄. Exhibit 8, Rev 2 Appendix A, p. 4N of 15N and Exhibit 14, Rev 3 Appendix A, p. 10N of 14N. The combined efficiency of lime

injection plus the WESP would remove more than 95 percent of the SAM, thus allowing a lower SAM emission limit to be achieved. For example, assuming that lime injection achieved 50 percent SAM control, the overall SAM control efficiency would increase from 95 percent to 97.5 percent³⁸ and SAM emissions from the boiler would drop from 26.6 tons per year to 13.3 tons per year³⁹, or by half. Thus, given the addition of lime injection which was anticipated in 2004, the Permit's BACT limit did not and does not represent the emission limit based on the maximum degree of control that is achievable. A much greater degree of control is achievable than erroneously assumed in the BACT analysis.

Again, Petitioners were unable to find engineering calculations evidencing that emissions from use of hydrated lime and a WESP will be equivalent to emissions from use of a WESP alone, as LG&E and KDAQ claim. If hydrated lime is used in conjunction with the WESP, reductions in SAM from the combined control options must be the basis for BACT. BACT must be based on the combined performance of a WESP and hydrated lime.

In addition, it is well known that SAM interferes with the ability of carbon to remove mercury. See, e.g., Exhibit 18, "Influence of SO₃ on Mercury Removal" 2008 and 2007. Thus, it is more likely that the true purpose of the lime injection system is to remove some of the SAM ahead of the baghouse to prevent the SAM from reacting with the carbon, thus reducing the carbon's absorption capacity for mercury. The application therefore is inaccurate and fails to disclose all relevant facts on a second count. 40 C.F.R. 70.5(c)(3)&(5). The lime injection system is actually part of the mercury control system and must be considered in the required case-by-case MACT analysis. See Section IV.e, *infra*.

d. The Permit lacks a BACT analysis for the Auxiliary Boiler

In their comments to KDAQ, Petitioners raised the need to revisit BACT for the auxiliary boiler due to doubling the boiler in size. Petitioners argued that, in a revised top-down BACT

³⁷ The terms SO₃, H₂SO₄, sulfuric acid mist, and SAM variously used in this petition, comments, the application, and elsewhere refer to the same pollutant.

³⁸ Combined control efficiency = $100[1-(1-0.5)(1.0.95)] = 97.5\%$.

³⁹ Revised SAM emissions from boiler = $[26.6 \text{ ton/yr}/(1-0.95)](1-0.975) = 13.3 \text{ ton/yr}$. Petitioners recognize that there may be technical limitations that prevent measurement of same at these levels, as was addressed in the Revision 2 administrative proceeding. See Exhibit 5, Rev 2 Redacted Briefs. However, these limitations do not free LG&E and KDAQ from a SAM BACT limit based on lime injection, but merely mean that the limit may be set as an operational standard accompanied by an appropriate numeric limit based on that standard. 401 KAR 51:001 Section 1(25)(c).

analysis for the auxiliary boiler, LG&E and KDAQ must consider add-on controls in addition to the design and operation limit. In response, KDAQ simply stated that it did not concur and that the design and operational limits continued to constitute BACT. Exhibit 6, Rev 3 RTC at p. 18. KDAQ is “incorrect as a matter of law”, and the Administrator must object.

i. Auxiliary boiler size

The Revision 3 SOB notes that “[s]ince the prior BACT determination on the auxiliary boiler was not contingent on the size of the proposed unit and was not affected by the size increase, the prior BACT determination for the auxiliary boiler is still applicable.” Exhibit 17, Rev 3 SOB at 23. This statement is technically, and thus legally, incorrect. The size of the auxiliary boiler is related to the relative cost of control: the cost effectiveness of control increases as size of the boiler increases. Thus, retaining the same BACT limit for a larger unit is inappropriate, as the larger unit should be able to achieve a lower limit at the same cost of control.

ii. Top-down BACT for CO

The TC2 project is subject to BACT for carbon monoxide (CO). In turn, Revision 3 will result in a net emissions increase in carbon monoxide of 9.4 tons per year over Revision 2, *Id.* at 5, attributable to an increase in the auxiliary boiler’s size and a doubling of annual hours of operation. *Id.* at 2. The Statement of Basis for Revision 2 included the following statement regarding the auxiliary boiler:

The auxiliary steam boiler will be a 40 mmBtu/hr, unit. The boiler will minimize emissions by utilizing low NOx burners and firing ASTM Grade No. 2-D S15 or equivalent fuel oil. The Division considers the proposed design and operation of the boiler and hours of operation for the boiler capped at 1,000 hours per year or less constitute BACT.

Exhibit 11, Rev. 2 SOB at 23. LG&E’s proposed changes to the auxiliary boiler and resulting increases in emissions require a re-analysis of CO BACT for Unit 32.

Contrary to the applicant’s and KDAQ’s assertion, the “proposed design and operation of the [auxiliary steam] boiler” do not constitute BACT. *See* Exhibit 17, Rev 3 SOB at 13. Rather, a proper top-down BACT analysis for CO from the auxiliary boiler must consider and either select

or properly reject add-on controls, such as an oxidation catalyst. Several existing auxiliary boilers use an oxidation catalyst and thus an oxidation catalyst must be considered as BACT for the TC2 auxiliary boiler. In addition, narrative BACT limits only are appropriate where the Cabinet determines that “technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible.” 401 KAR 51:001 Sec. 1(25)(c); 40 C.F.R. 51.166(b)(12). Otherwise, BACT must include a numeric emissions limit. Since the auxiliary boilers using an oxidation catalyst have numeric BACT limits, the TC2 narrative permit limit of “proposed design and operation” is inappropriate.

The existing auxiliary boilers using an oxidation catalyst are located at the Crockett Cogeneration Facility in California. These three 40,000 lb/hr Foster-Wheeler auxiliary boilers were permitted at 11 ppm CO @ 3% O₂ in 1996, achieved using an oxidation catalyst. See, e.g., Exhibit 19, Major Facility Review Permit issued to Crockett Cogeneration, at 7-8 (including emission limit of 3.0 lbs/hr based on a 3-hour average or 11.0 ppmv at 3% O₂ dry basis based on a 3-hour average). The June 1997 source test measured 3.24 ppm @ 3% O₂ from Boiler B and the June 1998 source test measured 6.02 ppm @ 3% O₂ from Boiler C. These boilers are clear indicators that the BACT analysis and limit for the TC2 auxiliary boiler are in error.

e. The Permit contains an unsupported BACT limit for SAM.

The permit does not set a proper BACT limit for SAM, as set forth in Petitioners’ briefs from the administrative hearing. See Exhibit 5, Rev 2 Redacted briefs. BACT does not ask what other plants are currently achieving, but what can this plant achieve for the future. See 401 KAR 51:001 Sec. 1(25); 40 C.F.R. 51.166 (b)(12). KDAQ and LG&E failed to conduct an analysis of what this plant can achieve, rendering the basis for the permit limits and the BACT analysis inadequate and improper.

SIP-approved Kentucky and federal regulations define BACT as requiring the maximum degree of reduction of each regulated pollutant achievable through “production processes and available methods, systems, and techniques.” Id. In other words, a BACT limit must derive from the method of pollution control used. To determine whether the proposed BACT limit represents the maximum degree of reduction achievable, supporting information is required, including a “detailed description of the system of continuous emissions reduction planned for the source or

modification, emissions estimates,” and other supporting information. 401 KAR 51:017 Sec 12(1)(c); 40 C.F.R. 51.166(n)(2)(iii).

Key to selecting a technically accurate BACT limit guaranteeing the maximum degree of reduction achievable is identifying “a corresponding performance level... for [the best control technology] considering source-specific factors.” See NSR Manual at B.23. Information to be considered in determining the performance level representing achievable limits are manufacturer’s data, engineering estimates, and the experience of other sources. *Id.* at B.24. The basis for the proposed limits must be clearly documented in the application, including emissions estimates and other information necessary to determine that BACT will be applied, i.e., calculations related to the selected control equipment. See 401 KAR 51:017 Section 12(1)(c), 40 C.F.R. 51.166(n)(2)(iii); see also 401 KAR 52:020 Sec. 5, 40 C.F.R. 70.5(c)(3). Without this information, the agency cannot fulfill its duty to make a BACT determination and to provide the basis for its decision.

The Revision 2 application and SOB failed to demonstrate that the selected SAM limit represents the maximum degree of reduction achievable for the new unit, in conflict with the above regulations. The permit sets BACT for SAM as use of a WESP and an emission limit of 26.6 lb/hour. Exhibit 3, Rev 3 Permit, p. 27 and Cond. B.2(j), p. 29. As support for this limit, the Rev 2 application lists two previous permits: the Thoroughbred permit with a limit of 0.00497 lb/MMBtu, and a permit with a different limit based on a different control technology. Exhibit 8, Rev 2 Appendix I, at I-27. Then, the applicant simply concludes that the source-specific emission limit associated with a WESP at TC2 is 26.6 lb/hour. *Id.* at I-29.

The application includes no supporting calculations for the SAM limit or cites to such calculations. Nor does the applicant discuss assumptions made in deriving the 26.6 lb/hour figure, other than that the “estimated sulfuric acid production rate basis is oxidation conversion of a total of 2.0 percent of SO₂ in the combustion process and across the SCR catalyst.” Exhibit 11, Rev 2 SOB at 21. The Cabinet concluded that the “proposed control technology and emission rate [of 26.6 lb/hour based on a rate of 0.004 lb/MMBtu] constitute BACT for the new SPC boiler.” *Id.* at 22. This approach to setting BACT is inconsistent with the BACT regulations, which mandate a thorough, case-by-case analysis, seeking out the maximum degree of reduction achievable for the proposed source. 401 KAR 51:017(1)(8). Mere consideration of what other

facilities are proposing or achieving is insufficient and a more complete BACT analysis is required. Id.; see also NSR Manual Chapter B.

Here, the SAM BACT limit is apparently based on a permit for the Thoroughbred Generating Station (which contained a limit expressed in lbs/MMBtu and not lbs/hour as in the TC2 permit, necessitating support for the conversion under the Cabinet's view that lbs/MMBtu and lbs/hour are two different limits), air quality modeling and the lowest measurable level of SAM, not the lowest emissions level achievable by this plant as required by the BACT regulations. Exhibit 5, Rev 2 Redacted briefs.⁴⁰ BACT for SAM should have been set as installation of a WESP designed to achieve the greatest control efficiency, an emissions limit associated with that control efficiency, and operation of the WESP at full capacity for all inlet concentrations. Id. The SAM BACT limit also must take into consideration any reductions from use of hydrated lime. See infra, Section V.c.iii.

VI. The Administrator Must Object Because the Permit Fails to Quantify Emissions of PM_{2.5}, Include BACT limits for PM_{2.5}, and Ensure Protection of the PM_{2.5} NAAQS and Increments.

Neither the applicant nor KDAQ contend that the Revision 2 and Revision 3 permits will result in no emissions of, or no significant net emissions increase in, particulate matter of less than or equal to 2.5 micrometers in diameter ("PM_{2.5}"). Rather, they put forth that a surrogate approach substituting PM₁₀ for PM_{2.5} is acceptable for Title V and PSD purposes. They are incorrect.

U.S. EPA separately regulates PM₁₀ and PM_{2.5} due to differences in health effects between the two, as reflected in the existence of separate NAAQS for PM₁₀ and PM_{2.5}. In 1997, EPA issued an annual standard for PM_{2.5} of 15 ug/m³, based on the 3-year average of annual mean PM_{2.5} concentrations, and a 24-hour standard of 65 ug/m³, based on the 3-year average of the 98th percentile of 24-hour concentrations. EPA recently (in September 2006, following issuance of the Revision 2 permit) tightened the 24-hour standard down to 35 ug/m³ and retained the annual standard of 15 ug/m³. EPA articulated the dangers of PM_{2.5} in its recent Fine Particle Implementation Rule, stating:

⁴⁰ Opening brief at 29-34 and Reply brief at 2-12.

The EPA established air quality standards for PM_{2.5} based on evidence from numerous health studies demonstrating that serious health effects are associated with exposures to elevated levels of PM_{2.5}. Epidemiological studies have shown statistically significant correlations between elevated PM_{2.5} levels and premature mortality. Other important effects associated with PM_{2.5} exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), changes in lung function and increased respiratory symptoms, as well as new evidence for more subtle indicators of cardiovascular health. Individuals particularly sensitive to PM_{2.5} exposure include older adults, people with heart and lung disease, and children.

Clean Air Fine Particle Implementation Rule, 72 Fed. Reg. 20586, 20586-20587 (Apr. 25, 2007) (to be codified at 40 C.F.R. Part 51). The numerous and grave harms of PM_{2.5} make it wholly impermissible to act as if PM₁₀ is PM_{2.5} in air quality permitting.

- a. The Permit cannot issue because LG&E did not quantify PM_{2.5} emissions in either its 2004 or 2007 Title V application.

The Permit cannot issue because the applicant failed and continues to fail to submit information for PM_{2.5} required under Title V. Again, an applicant must include emissions-related information for all pollutants “for which the source is major” and “all emissions of regulated air pollutants.” 401 KAR 52:020 Section 5(3)(a); 40 C.F.R. 70.5(c)(3)(i) and (viii); 42 U.S.C. 7661b(c). TC2 meets both of these requirements for PM_{2.5}. The provision on its face includes particulate matter of less than or equal to 2.5 micrometers in diameter (“PM_{2.5}”), as EPA has promulgated a NAAQS for PM_{2.5}, 40 C.F.R. 50.7, and, therefore, PM_{2.5} is clearly a “regulated air pollutant.” Furthermore, TC2 is a major source of PM_{2.5}. Under Title V, a source is major for an air pollutant if it directly emits or has the potential to emit 100 tons per year or more of any “air pollutant.” 40 C.F.R. 70.2 (referencing Section 302 definitions); 42 U.S.C. 7602(j) (defining “major stationary source”); 401 KAR 52:020 Section 1. While LG&E did not include an estimation of PM_{2.5} emissions in its applications, as is the crux of this complaint, the Revision 3 application reports an overall project net emissions increase for PM/PM₁₀ of 559.0 tons per year. Exhibit 17, Rev 3 SOB at 4. This amount is highly likely to include at least 100 tons per year of PM_{2.5}. See, e.g., AP-42, Section 1.1, Bituminous and Subbituminous Combustion, Figures 1-1.1 to 1-1.6:

LG&E did not include the required PM2.5 emissions information in either the 2004 or 2007 Title V application. This failure, which is on-going, violates the duties first to provide in emissions information and calculations for all PM2.5 emissions related to the proposed new unit in the 2004 application, and second to supplement the 2004 application with this information due to its original omission. See Section III.d, *infra*.

Violations of the PM2.5 emissions data and calculations requirements also occurred with the 2007 Revision 3 Title V application, as the proposed equipment changes will result in changes in emissions of PM2.5 relative to the 2004 Revision 2 application. See 401 KAR 52:020 Section 4d)(b) and (c). The Revision 3 application reports that the changes will result in a decrease in PM/PM10 of 8.5 tons per year from the 2004 Application. Exhibit 16, Rev 3 Application Section 3 at 3-3. It does not breakdown this figure to specify PM2.5 emissions, as required, or provide supporting calculations for the PM2.5 fraction. Additionally, the injection of lime and PAC upstream of the baghouse will increase the PM2.5 fraction from the source. This finer material is not as efficiently removed by the downstream baghouse as are larger particles. The size of the increase in PM2.5 depends on the amount of lime and PAC that is injected and their particle size distributions. The Revision 3 Application does not contain this information as required, and thus the contribution of lime and PAC to PM2.5 emission cannot be determined. See 401 KAR 52:020 Section 5(3) (application must include “all emission” for which source is major and “all emissions” of regulated air pollutants, “all” fugitive emissions, “identification and description of all emission units and emission points in sufficient detail to establish the basis for applicable requirements and emission fees,” “fuels, fuel use, raw materials, production rates, and operating schedules to the extent needed to determine or limit emissions,” and calculations on which the information in paragraph 3 is based).

LG&E may not meet its obligations to provide the required PM2.5 emissions information by submitting only PM10 information. As set forth below, the surrogate approach conflicts with clear statutory and regulatory duties to address PM2.5 directly. U.S. EPA also has explicitly rejected reporting PM10 in place of PM2.5 in the Title V context. See Clean Air Fine Particle Implementation Rule, 72 Fed. Reg. at 20659 (rejecting PM10 surrogacy approach and stating that “sources will be required to include their PM2.5 emissions in their Title V permit applications, in any corrections or supplements to these applications, and in applications submitted upon modification and renewal.”) Because the statutory and regulatory duty to report

PM2.5 emissions existed in 2004 (prior to the April 2007 final rule) and the applicant has a duty to supplement the application, LG&E must submit PM2.5 information for the 2004 application as well.

The Administrator must object to the Revision 3 permit due to its perpetuation of LG&E's initial and on-going failure to provide PM2.5 emissions-related information for Revision 2, as well as omission of PM2.5 information for the Revision 3 changes. Based on the Revision 2 initial and on-going violations of the Title V information requirements, the Administrator also must move to reopen the Revision 2 permit. See Section III.d, *infra*.

- b. The Permit is not supported by an Air Quality Modeling Demonstration for PM2.5.

The permit cannot issue because LG&E did not show sufficiently that the permit will not cause or contribute to air pollution in violation of the PM2.5 National Ambient Air Quality Standards ("NAAQS") or PSD increment in any area. Under state and federal regulations, the applicant has the burden to demonstrate protection of air quality:

The owner or operator of the proposed source or modification shall demonstrate that allowable emissions increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions, including secondary emissions, shall not cause or contribute to air pollution in violation of:

1. A national ambient air quality standard in an air quality control region; or
2. An applicable maximum allowable increase over the baseline concentration in an area ["PSD increment"].

401 KAR 51:017 Sec. 9; 40 C.F.R. 51.166(k). Applicants perform modeling analyses in order to demonstrate that a source will not adversely impact NAAQS or a PSD increment. See 401 KAR 51:017 Secs. 10 and 11; 40 C.F.R. 51.166(l) and (m). In general, modeling should identify "worst-case impacts" to *ensure* protection of NAAQS and PSD increments. 401 KAR 51:017 Sec. 9; 40 C.F.R. 51.166(k); See Exhibit 8, Rev. 2 Appendix J at 3-5. For modeling to meaningfully ensure no adverse impacts, permitted emission levels must be modeled. See 401 KAR 51:017 Sec. 9; 40 C.F.R. 51.166(k). Conversely stated, sources must operate within their modeled limits.

Under state and federal PSD regulations, the applicant must provide an air quality impact analysis for all NSR pollutants which the facility will result in a significant net emissions increase. Neither the agency nor the applicant contends that the TC2 project will result in insignificant emissions of PM_{2.5}. KDAQ excused LG&E from modeling PM_{2.5} and permitted modeling of PM₁₀ instead. Exhibit 17, Revision 3 SOB at 27. In its Response to Comments, the agency cited two reasons for rejecting Petitioners' argument about the need to include an analysis of PM_{2.5}. Both of these arguments must be rejected.

First, KDAQ stated that previous BACT determinations are not at issue in the Revision 3 permitting action. Exhibit 6, Rev 3 RTC at p. 21. This argument is incorrect because BACT for PM_{2.5} is properly at issue in this permitting action. See Section V.a, *infra*, and VI.c, *supra* (omission of PM_{2.5} BACT in initial PSD permit requires correction of past and current Title V permit; information lacking to determine whether Revision 3 changes result in "any emissions" increase in PM_{2.5}). Furthermore, the duty to ensure compliance with NAAQS is separate from the BACT requirement, see 401 KAR 51:017 Sections 8 and 9, and appropriately is triggered in this proceeding based on the new equipment proposed in Revision 3. The injection of lime and PAC upstream of the baghouse will increase ultra fine particulate matter. The Revision 3 Application, however, does not contain information necessary to calculate the effect of lime and PAC injection on PM_{2.5} emissions. The contribution of lime and PAC to PM_{2.5} emission cannot be determined, as is necessary to determine whether the change will result in "any emissions" increase in PM_{2.5} and trigger the duty to ensure compliance with the NAAQS.

KDAQ also invoked the U.S. EPA's surrogate policy as its second justification for omitting the required PM_{2.5} analysis by citing to several guidance documents. These documents include (1) a 1997 Memorandum from John Seitz, *see* Memorandum from John S. Seitz, Director, EPA Office of Air Quality Planning & Standards, Interim Implementation of New Source Review Requirements for PM_{2.5} (Oct. 23, 1997); (2) a 2005 Memorandum from Stephen Page, Memorandum from Stephen Page, Office of Air Quality and Planning and Standards, Implementation of New Source Review Requirements in PM-2.5 Nonattainment Area (Apr. 5, 2005); and (3) U.S. EPA's proposed Implementation Rule of September 2007. Exhibit 6, Rev 3 RTC at p. 21. None of the cited sources permit LG&E and KDAQ to sidestep the requirement to assure compliance with the PM_{2.5} NAAQS by acting as if PM₁₀ is PM_{2.5}.

U.S. EPA memoranda do not supersede the authority of the Clean Air Act's implementing regulations. Regardless of what EPA may have stated in memoranda, U.S. EPA does not have the power to effectively repeal a federal statutory requirement that States ensure that emissions from a given facility will not result in the violation of national ambient air quality standards for *any* pollutant. 42 U.S.C. 7410(a)(2)(D)(i)(I); 7470(1). U.S. EPA promulgated a NAAQS for PM_{2.5}, making PM_{2.5} a pollutant for which modeling must be done to ensure that the NAAQS will not be violated. 40 C.F.R. § 52.21 (k)(1). The EPA cannot, with guidance, effectively repeal a regulation. “Deference is not abdication, and it requires us to accept only those agency interpretations that are reasonable in light of the principles of construction courts normally employ.” Pettibone Corp. v. United States, 34 F.3d 536, 541 (7th Cir. 1994) (quoting EEOC v. Arabian American Oil Co., 499 U.S. 244, 260, 111 S. Ct. 1227 (1991)) (Scalia, J. concurring in part and in the judgment). Notably, the Seitz Memo clearly states that it does not bind states, local governments, or the public as a matter of law.⁴¹

Moreover, the U.S. EPA's recommended use of PM₁₀ as a surrogate for PM_{2.5} expired by its own terms when U.S. EPA published the final PM_{2.5} implementation rule in April 2007. The 1997 Seitz Memo provided *interim* guidance for implementing the new PM_{2.5} NAAQS. This now nearly ten-year-old memo stated that sources could use the PM₁₀ surrogacy approach to meet NSR requirements until certain difficulties were resolved, most notably with respect to monitoring, emissions estimation, and air quality modeling. The more recent, but still dated for the purposes of the present project, Page Memo included a qualified reaffirmation of the surrogacy approach. The Page Memo noted that U.S. EPA recommended using PM₁₀ as a surrogate for PM_{2.5} “until [U.S. EPA] promulgate[s] the PM_{2.5} implementation rule.”

⁴¹ Petitioners note that the adequacy of the “surrogate approach” for analyzing PM_{2.5} impacts from a facility has been addressed by the Environmental Appeals Board (EAB) in *In re: Prairie State Generating Company*, PSD Appeal No. 05-05. In the *Prairie State* case, the EAB ruled that the approach used by the Illinois Environmental Protection Agency (“IEPA”) to analyze PM_{2.5} impacts was in accord with controlling law. However, in that case, IEPA “conservatively assum[ed] that all the particulate matter emitted from the boilers is PM_{2.5}.” *Prairie State*, PSD Appeal No. 05-05, at 128. Thus, instead of *ignoring* PM_{2.5} impacts all together as LG&E did by looking only at protection of the PM₁₀ NAAQS, the approach employed by IEPA accounted for PM_{2.5} impacts by assuming that *all* particulate matter coming from the facility was PM_{2.5}, and based on that analysis found that *Prairie State* would not violate national ambient air quality standards for PM_{2.5}. KDAQ at minimum should have adopted the approach used in *Prairie State*, which has been explicitly approved by the EAB. Petitioners also note that use of PM₁₀ as a surrogate for PM_{2.5} may be viewed as using a model other than the preferred model and thus must meet the procedural requirements associated with use of an alternative model, including approval of the Regional Administrator and public notice and comment. See 40 C.F.R. § 52.21(l)(2). As far as Petitioners are aware, KDAQ did not receive Regional Administrator approval for or notice the decision to use PM₁₀ as a surrogate for 2.5.

Not more than six months later, U.S. EPA published a proposed PM_{2.5} implementation rule. The proposed rule made clear that the surrogacy approach would expire when the proposed rule was finalized:

Under the Title V regulations, major sources have an obligation to include in their Title V permit applications all emissions for which the source is major and all emissions of regulated air pollutants. The definition of regulated air pollutant in 40 C.F.R. 70.2 includes any pollutant for which a NAAQS has been promulgated, which would include both PM₁₀ and PM_{2.5}. To date, some permitted entities have been using PM₁₀ emissions as a surrogate for PM_{2.5} emissions. Upon promulgation of this rule, EPA will no longer accept the use of PM₁₀ as a surrogate for PM_{2.5}.⁴²

Issued in April 2007, the final rule clearly affirms U.S. EPA's rejection of the surrogacy approach: "the EPA will no longer accept the use of PM₁₀ emissions information as a surrogate for PM_{2.5} emissions information given that both pollutants are regulated by a National Ambient Air Quality Standard and therefore are considered regulated air pollutants." 72 Fed. Reg. at 20660; *see also id.* at 20659-60 (listing circumstances necessitating the quantification of PM_{2.5} emissions). Reliance on guidance that U.S. EPA itself has abandoned is in direct conflict with the Clean Air Act's requirements.

U.S. EPA's issuance of a proposed implementation rule for PM_{2.5} increments, significant impact levels, and significant monitoring concentrations in September 2007, Prevention of Significant Deterioration (PSD) for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5}) - Increments, Significant Impact Levels (SILs) and Significant Monitoring Concentration (SMC), 72 Fed Reg. 54112 (Sept. 21, 2007), does not shield KDAQ from complying with the clear requirements of state and federal law. The proposed rule is merely guidance until it is finalized. In addition, the preamble to the rule only provides that states "may" continue to use PM₁₀ as a surrogate for PM_{2.5}. Nothing in the Kentucky SIP mandates that KDAQ wait for U.S. EPA to first establish implementation protocols and reference test methods before requiring an applicant to demonstrate compliance with the PM_{2.5} NAAQS. 401 KAR 51:017 Section 9. Instead, the SIP plainly requires the applicant to submit its PM_{2.5} demonstration.

⁴² U.S. EPA, Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards ("Proposed PM_{2.5} Implementation Rule"), 70 Fed. Reg. 65984, at 66043 and 66058 (Nov. 1, 2005)

Finally, technical difficulties in directly implementing the PM_{2.5} NAAQS that grounded the interim guidance back in 1997 have been resolved.⁴³ LG&E and KDAQ thus cannot rely on arguments that directly regulating PM_{2.5} is not possible. Any such assertions regarding technical limitations relative to PM_{2.5} are outdated. Technical capabilities for modeling PM_{2.5} do exist. See 70 Fed. Reg. 68218, 68234-68235, 40 C.F.R. § 51, App W, 5.1 (e), (f), (h), 5.2.2.1. EPA has identified available models to analyze the impacts of PM_{2.5} in its Guideline to Air Quality Models. See Appendix W of 40 C.F.R. § 51, proscribing modeling requirements for small particles (PM_{2.5}); *see also* 40 C.F.R. § 52.21(l); 61 Fed. Reg. 41838, 41850, 40 C.F.R. § 51, App W, 7.2.2(c) (August 1996) (showing that historically, “ISC [was] recommended for point sources of small particles”); see also 70 Fed. Reg. 68218, 68234, 40 C.F.R. § 51, App W, 5.1 (e),(f),(h) (December 2005). Appendix W “addresses the regulatory application of air quality models for assessing criteria pollutants under the Clean Air Act.” 70 Fed. Reg. 68218, *Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions*, Appendix W of 40 C.F.R. § 51 (“The Modeling Guideline”), Summary. The Guideline provides for modeling of PM_{2.5} using both the ISC and AERMOD models. U.S. EPA has approved two methods, CTM-039 and CTM-040, for measuring PM_{2.5}. 72 Fed. Reg. 20586, 20653. Experts in other cases likewise have demonstrated, and a state administrative appeals board has agreed, that the technical concerns behind the surrogacy approach have been resolved.⁴⁴

c. The Permit Lacks BACT limits for PM_{2.5}

Not only does the Permit not ensure protection of the PM_{2.5} NAAQS and increments, but it lacks required BACT limits for PM_{2.5}. Kentucky’s SIP-approved PSD regulations require a BACT limit “for each regulated NSR pollutant for which the source has the potential to emit in significant amounts.” 401 KAR 51:017, sec. 8(2). A “regulated NSR pollutant” includes any “pollutant for which a national ambient air quality standard has been promulgated...” and any other “pollutant that otherwise is subject to regulation under 42 U.S.C. 7401 to 7671q....” 401 KAR 51:001, Section 1(210)(a) and (d). EPA has promulgated a NAAQS for PM_{2.5}. 62 Fed.

⁴³ *See* Seitz Memo at par. 1.

⁴⁴ *See, e.g.,* Exhibit 21, MN Highwood decision and Expert Report of Hal Taylor, “Feasibility of Conducting PM 2.5 BACT Analysis for the Highwood Generation Station,” submitted on behalf of Appellants, Montana Environmental

Reg. 38711; 40 C.F.R. § 50.7. KDAQ furthermore has admitted that PM2.5 is a “regulated NSR pollutant.” See Exhibit 20, Cash Creek Revised SOB at 14 (“The following pollutants are subject to BACT:... PM2.5...”)

The new unit permitted in Revision 2 will indisputably result in a significant net emissions increase in PM2.5, as the significance level for PM2.5 is “any emissions increase.” 401 KAR 51:001, Section 1(221)(b); 401 KAR 51:017, Section 8(2). Due to the omission of injection rate and particle size information for lime and PAC injection, inadequate information exists to determine whether the Revision 3 changes trigger BACT for PM2.5. KDAQ may not pretend that PM10 is PM2.5 in contravention of the plain language requirements to impose BACT limits for PM2.5. See Section VI.b, *infra*. The Administrator therefore must object to the Revision 3 permit for its failure to include the required PM2.5 BACT limits, omitted in the Revision 2 permitting, and because the application included insufficient information to determine whether the Revision 3 changes result in “any emissions” increase in PM2.5.

VII. The Administrator Must Object Because the Permit Fails to Express Limits in a Manner That Ensures Protection of Short-Term and Long-Term Air Quality.

The permit must establish enforceable emission rates in both units of mass per unit time and mass per MMBtu (or a control efficiency) in order to *demonstrate* continuous compliance over all operating conditions, and to ensure protection of short-term ambient air quality standards. See EPA Region 9 Title V Permit Review Guidelines at p. III-57 (“The title V permit must clearly include each limit and associated information from the underlying applicable requirement that defines the limit, such as averaging time and the associate reference method”); see also NSR Manual at B.56. The following permit limits are expressed only in pounds per million Btus: particulate matter, SO₂, and NO_x from Unit 1; particulate matter and SO₂ from Unit 2; particulate matter, carbon monoxide and Volatile Organic Compounds (“VOCs”) from Unit 31; and particulate matter and hydrogen chloride from Unit 32. Exhibit 3, Rev 3 Final Permit, at 2-3, 7, 28, and 37. The only way to convert these figures to mass per unit time is to use the unit’s maximum heat input rate. However, the permit’s maximum heat input rate (Btus per hour) is not directly enforceable because it is contained in the unit description. Descriptive information is not enforceable. More specifically, the permit contains no direct requirement to monitor heat input.

Consequently, if the firing rate is not enforceable, then emission limits expressed in pounds per million Btus are not enforceable, and the permit fails to demonstrate continuous compliance over all operating conditions and fails to ensure protection of air quality. The United States District Court for the Eastern District of Kentucky and the U.S. EPA have recognized the need to include a heat input limit as an enforceable “operating limit.” See United States v. East Kentucky Power Cooperative, slip op. at 20-25; U.S. EPA, Order Granting in Part and Denying in Part Petition for Objection to Permit, Aug. 30, 2007, at 12 (remanding permit for incorporation of a maximum heat input limit).

The requirement for setting a limit in terms of both an hourly and a production rate, while not explicit, arises from the express provisions that (a) BACT ensure the maximum degree of reduction achievable for each regulated NSR pollutant, (b) permits establish a method to ensure continuous compliance with all permit limits, i.e., ensure compliance with BACT limits over all operating conditions, (c) permit limits be enforceable, and (d) short-term ambient standards are protected. See 401 KAR 51:001, Sec. 1(25); 42 U.S.C. § 7602(k), Secs. 10 and 26; 401 KAR 51:017, Sec. 9. The NSR Manual merely explains the interaction of these various requirements and how they direct the setting of a BACT limit; it does not purport to create a new requirement or unreasonably interpret the existing requirements. See NSR Manual at B.56.⁴⁵ As stated by U.S. EPA, “that the purpose of requiring dual limits is to ensure emissions are controlled regardless of the production rate or operational conditions of the facility.” In re Steel Dynamics, Inc., 9 E.A.D. 165, *139 (EAB 2000).

In addition, it is not clear why the state agreed to include an hourly rate for carbon monoxide but not for particulate matter and VOCs. The Statement of Basis for Revision 2 clearly states that modeling was submitted to demonstrate compliance with the particulate matter NAAQS. Exhibit 11, Revision 2 SOB at 31-34. The U.S. EPA commented that hourly limits need to be set for both PM/PM10 and VOCs, as well as CO. Exhibit 22, Rev 2 RTC at 6. The permit should include an hourly rate for particulate matter and VOCs, as well as CO.

and Transmission Cooperative – Highwood Generating Station, Air Quality Permit No. 3423 (Sept. 2007).

⁴⁵ “BACT emission limits or conditions must be met on a continual basis at all levels of operation (e.g., limits written in pounds/MMbtu or percent reduction achieved), demonstrate protection of short term ambient standards (limits written in pounds/hour).” In addition, the Cabinet mischaracterizes the weight (not) to be given the NSR Manual. Cabinet’s Memorandum at pp. 6-7. As Petitioners have laid out, a draft guidance is to be given deference in keeping with its power to persuade on the issue at hand. The NSR Manual here integrates various existing PSD requirements in a manner completely consistent with their text and purpose. Such integration is crucial to effecting the overall

As set forth above, the Administrator at all times has the authority to object to a permit that does not ensure compliance with all applicable requirements, and thus must object.

VIII. The Administrator Must Object Because the BACT Analyses Omitted Consideration of Clean Fuels.

The Cabinet must consider clean fuels in its BACT analysis. 42 U.S.C. 7479(3). The BACT analyses for SAM and PM continue to fail to consider use of clean fuels. As with the recent Spurlock permits, LG&E and KDAQ fail to provide an explanation as to “why KYDAQ did not consider selection of a lower sulfur coal ‘appropriate or necessary’ for achieving BACT at [TC2] based on the applicable permitting criteria.”⁴⁶

Similar to Spurlock, LG&E identified several different types of coal or coal blends for use as fuel and did not eliminate any of them as technically infeasible. In fact, LG&E openly states that the facility will be able to and will burn the range of fuels presented in the application. An analysis of the three blends described in the application, prepared for LG&E by a consultant, shows that Test Coal B (the lowest in sulfur content) *in conjunction with a wet ESP* will result in lower emissions of sulfuric acid mist than will the performance coal or Test Coal A. See Exhibit 15, LGE-0021817, p. 0021862, submitted in the Revision 2 administrative proceeding. Despite this showing that the sulfur content of the coal is relevant to emission levels using the selected BACT add-on control, neither LG&E nor KDAQ provide the requisite analysis explaining why one coal type – Test Coal B – was not the basis for BACT. Instead, the BACT limits may be met by all three blends. The coal blends also differ in terms of ash content, and fuel sulfur level is related to formation of the condensable fraction of total PM (via formation of sulfur trioxide, which reacts with water in flue gas to form SAM), but the applicant and KDAQ fail to assess cleaner fuels for PM BACT. The permit cannot issue without these analyses.

BACT requires a pollutant-by-pollutant determination. Where, as here, a project nets out of SO₂ BACT, the applicant is not absolved from considering clean fuels in its BACT determinations for other pollutants.⁴⁷ As this plant is not a mine-mouth plant, consideration of

⁴⁶ U.S. EPA, Order Granting in Part and Denying in Part Petition for Objection to Permit (response to Spurlock Title V permit submitted by Sierra Club), Aug. 30, 2007, at p. 30.

⁴⁷ The historic consideration of low sulfur fuels primarily for SO₂ BACT most likely is due to that pollutant’s high correlation with fuel sulfur levels, not the irrelevance of clean fuels to other pollutants. If low sulfur fuel is not technically or economically feasible for SO₂ control, it is highly likely to be technically or economically infeasible

cleaner fuels is not “redefining the source,” but is instead a control technology that must be considered as part of the BACT analysis. See *Sierra Club v. U.S. EPA*, 2007 U.S. App. Lexis 20215 at *7 (7th Cir. Aug. 24, 2007) (“Some adjustment in the design of the plant would be necessary in order to change the fuel source from high-sulfur to low-sulfur coal... but if it were no more than would be necessary whenever a plant switched from a dirtier to a cleaner fuel, the change would be the adoption of a ‘control technology.’ Otherwise ‘clean fuels’ would be read out of the definition of such technology.”) LG&E must provide a proper top-down analysis explaining why Test Coal B does not set BACT for SAM and PM.

IX. The Administrator Must Object Because the BACT Analyses Omit Periods of Startup, Shutdown, and Maintenance.

Petitioners here, as in their prior petition on Revision 2, Exhibit 4, Rev 2 Title V Petition at 24-26, raise the continuing failure to include BACT limits that apply during periods of startup, shutdown, and maintenance. The Permit excludes periods of startup and shutdown from all emission limits except those limits expressed as tons per year. Exhibit 3, Rev 3 Final Permit, Cond. 2(p) at 29.⁴⁸ Thus, these periods are omitted from the BACT limits for PM/PM₁₀ (3-hr average), CO (30-day rolling average), VOC (3-hr rolling average), sulfuric acid mist (3-hr rolling average), and fluorides (3-hr rolling average). The Revision 2 Statement of Basis puts forth that

the owner or operator shall utilize good work and maintenance practices and manufacturer’s recommendations to minimize emissions during, and the frequency and duration of, such startup and shutdown events. The Division concurs that these practices and the supercritical design of boiler constitute BACT for startup and shutdown operations of the new SPC boiler.

for other pollutants whose levels are impacted relatively less than SO₂ by its use. In addition, where use of low sulfur fuel is selected through an SO₂ BACT analysis, that selection will carry through as a baseline for BACT for SAM and PM (i.e., clean fuels will be part of BACT for other pollutants like SAM and PM whether explicitly stated or not). The AES Puerto Rico permit, for example, contains a limit on sulfur content of the fuel and a SAM BACT limit significantly lower than that at TC2. This permit was cited by U.S. EPA in its response to the Spurlock Title V petition with regards to SO₂ BACT and low sulfur coal. Consideration of low sulfur coal in an SO₂ BACT analysis therefore may be a proper proxy for low sulfur fuel in a SAM or PM analysis.

⁴⁸ “The above emission limitations shall not apply during periods of startup and shutdown. However, emissions during startup and shutdown shall be included in determining compliance with tons per year limits specified in this permit.”

Exhibit 11, Rev 2 SOB at 23. Similar language is found in the permit for TC2, Exhibit 3, Rev 3 Final Permit, Cond. B.2(p) at p. 29, in addition to a general statement for “Source Control Equipment,” *Id.* at 60.⁴⁹ The general duty rule for startup and shutdown contained in Section E did not arise out of a proper case-by-case BACT analysis. As such, it is no substitute for specific BACT limits. SIP-approved 42 U.S.C. § 7479(3); 40 C.F.R. 52.21(b)(12) 401 KAR 51:017 Sec. 1(8) (BACT requires a case-by-case determination).

Lacking any specific BACT limits during startup and shutdown, and in response to a comment by U.S. EPA recommending that the Cabinet “require the owner/operator to develop a startup/shutdown plan,” the Cabinet added the following permit language:

The permittee shall submit a startup and shut down plan to implement the requirements of this permit and 401 KAR 50:055. The plan shall be submitted at least ninety (90) days prior to the startup of the Emission Unit #2 for the Division’s approval. The startup/shutdown plan will be accessible for public review at the Division’s central office and the regional office.

Exhibit 3, Rev 3 Final Permit, Cond. G(a)17 at 66. This condition is the only language in the permit defining the requirements for the to-be-submitted plan. As such, it is wholly inadequate to ensure compliance with BACT limits during periods of startup, shutdown, and malfunction.

The provision instead is an “afterthought” added to respond to U.S. EPA and does not reflect “sufficient consideration to design or other possible changes to the proposed facility to address [possible exceedances of BACT limits during startup and shutdown].” See In re Rockgen Energy Center, PSD Appeal No. 99-1, at 553 (Aug 25, 1999). Specifically, the provision lacks any case-by-case details as to what conditions might be included in the plan and fails to set out any criteria that the Cabinet will use in approving the plan. See *id.* These omissions are grounds for remand of this provision. See *id.* at 554; see also In re Tallmadge Generating Station, Order Denying Review in Part and Remanding in Part, PSD Appeal No. 02-12, slip op. at 26-27 (EAB

⁴⁹ “Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.”

May 21, 2003) (noting the lack of evidence in the administrative record regarding the agency's consideration of ways to eliminate or reduce excess emission during startup and shutdown to meet compliance obligations under the CAA, and remanding the provision).

In order to justify reliance on such a plan in the BACT analyses, the Cabinet must make an on-the-record determination as to "whether compliance with existing permit limitations is infeasible during startup and shutdown..." *Id.* If the Cabinet determines that compliance is infeasible, it must specifically determine "what design, control methodological or other changes are appropriate for inclusion in the permit to minimize the excess emissions" during periods of startup and shutdown. *Id.* The Cabinet is required, to put it another way, to

specify and carefully circumscribe in the permit the conditions under which [the applicant] would be permitted to exceed otherwise applicable emissions limits and establish that such conditions are nonetheless in compliance with applicable requirements, including NAAQS and increment provisions.

Id. The Administrator must object to the permit and require amendment of Condition G(a)17 on these grounds.

The Permit may not provide an exemption from short-term BACT limits for periods of startup, shutdown and maintenance, and instead include only vague, to-be-determined narrative limits. See In re Indeck-Elwood, LLC, PSD Appeal No. 03-04 (EAB Sept. 27, 2006); see also Exhibit 5, Rev 2 Redacted briefs (Opening Brief at 42-45, Response Brief at 16-21, Reply Brief at 16-18).

X. The Administrator Must Object Because the Air Quality Modeling Demonstration Omits Periods of Startup, Shutdown, and Malfunction.

LG&E and KDAQ erred by failing to include periods of startup, shutdown and malfunction in their BACT analyses and determinations for PM/PM10, CO, VOCs, sulfuric acid mist, and fluorides. This failure also constitutes a failure to demonstrate that the proposed unit will not cause or contribute to a violation of a NAAQS or PSD increment, as (a) the emission rate used in the modeling is not required during periods of startup, shutdown and malfunction, and (b) the permit application did not include any estimates of emissions during startup, shutdown, and malfunction to be used in modeling. During startup, shutdown and malfunction, emissions of CO, VOCs and NO_x, as well as other NSR pollutants, can increase due to

incomplete combustion or because the pollution control technologies cannot be used. Therefore, the failure to include periods of startup, shutdown and malfunction in the air quality modeling demonstrations require the Administrator to object.

Specifically, by omitting VOC emissions from startup, shutdown and malfunction, and failing to conduct a full ambient air quality impact analysis for ozone, the applicant failed to demonstrate protection of the ozone NAAQS and increment. Under SIP-approved Kentucky regulations, a facility that emits greater than 100 tpy of VOCs must conduct an ambient impact analysis due to concerns with violating ozone NAAQS and increments. 401 KAR 51:017 Sec. 7(5) and Secs. 9-11. The Revision 2 application estimated TC2's VOC emissions at 97.8 tpy; the Cabinet used this figure as the basis for an exemption from the ozone impacts analysis requirement. Exhibit 7, Rev. 2 Application Table 2-1 at 2-13, Exhibit 11, Rev. 2 SOB at 4, 31-34. Given a number this close to the 100 tpy threshold, any increase in VOCs – such as those from startup, shutdown and maintenance – can be significant in terms of triggering an ambient air quality analysis to assess compliance with ozone NAAQS and increments. Neither the applicant nor the agency determined whether startup, shutdown and maintenance could result in additional VOC emissions in the range of 2.2 tpy or more. The applicant thus failed to demonstrate protection of ozone NAAQS and PSD increments.

CONCLUSION

In sum, the Commonwealth of Kentucky, Environmental and Public Protection Cabinet's final Revision 3 Title V permit for the source located at 487 Corn Creek, Bedford, Trimble County fails to meet the legal requirements of the CAA, 40 C.F.R. Part 70, and Kentucky's SIP. Petitioners respectfully request that the Administrator object to the Title V Permit for the proposed source located at 487 Corn Creek, Bedford, Trimble County as required under Title V and 40 C.F.R. § 70.8(c)(1).

Respectfully submitted,



Meleah A. Geertsma
Faith E. Bugel
ENVIRONMENTAL LAW & POLICY
CENTER
35 East Wacker Drive, Suite 1300
Chicago, Illinois 60601
312-673-6500
Fax: 312-795-3730

On behalf of:
SAVE THE VALLEY
SIERRA CLUB
VALLEY WATCH

DATED: April 29, 2008

**BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

In the Matter of the Final Operating Permit for:

LOUISVILLE GAS & ELECTRIC to operate
the proposed source located at 487 Corn Creek,
Bedford, Trimble County, Kentucky

Permit No. V-02-043 Revision 3
Source I.D. No. 21-223-00002

Proposed by the Commonwealth of Kentucky,
Environmental and Public Protection Cabinet

CERTIFICATE OF SERVICE

STATE OF ILLINOIS)
) ss
COUNTY OF COOK)

I make this statement under oath and based on personal knowledge. On this day, April 29, 2008, I caused to be served upon the following persons a copy of Sierra Club's Petition to the United States Environmental Protection Agency In the Matter Of The Final Revised Title V Operating Permit For The Louisville Gas & Electric Generating Station Located at 487 Corn Creek, Bedford, Trimble County, Kentucky, via Certified Mail, Return Receipt Requested:

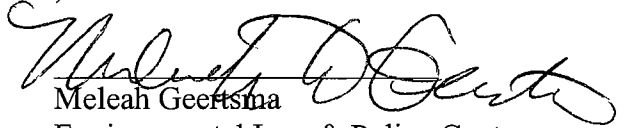
Stephen L. Johnson
US EPA Administrator
Ariel Rios Building
1200 Pennsylvania Ave, N.W.
Washington, DC 20460

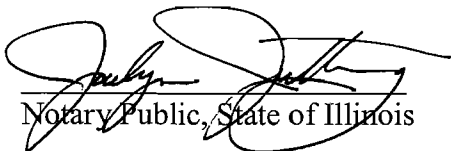
Environment and Public Protection Cabinet
Department for Environmental Protection
Division of Air Quality
803 Shenkel Lane
Frankfurt, KY 40601

Louisville Gas & Electric Co.
Trimble County Station
487 Corn Creek Rd.
Bedford, Ky 40006

Robert Ehrler
LG&E Energy LLC
220 W. Main Street
P.O. Box 32030
Louisville, KY 40232

Signed and sworn to before me
This 29th Day of April, 2008


Meleah Geertsma
Environmental Law & Policy Center


Notary Public, State of Illinois

