BEFORE THE ADMINISTRATOR UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:)	
Tennessee Valley Authority)	
	PETITION No.: IV-2007	7-3
Paradise Fossil Fuel Plant)	
Drakesboro, Kentucky)	
TITLE V AIR QUALITY PERMIT)	
# V-07-018)	
)	
ISSUED BY THE KENTUCKY	·	
DIVISION FOR AIR QUALITY)	

ORDER RESPONDING PETITION TO OBJECT TO TITLE V PERMIT

On December 27, 2007, the United States Environmental Protection Agency (EPA) received a petition from Preston Forsythe, the Center for Biological Diversity, Kentucky Heartwood, Sierra Club, and Hilary Lambert (Petitioners) pursuant to Section 505(b)(2) of the Clean Air Act ("CAA" or "Act"), 42 United States Code (U.S.C.) § 7661d(b)(2). The Petition requests that EPA object to the CAA operating permit issued by the Kentucky Division for Air Quality ("KDAQ" or "Division") on November 1, 2007, to Tennessee Valley Authority (TVA) for the Paradise Fossil Fuel electric generating facility (Plant Paradise) in Drakesboro, Kentucky. The November 1, 2007, permit was issued, in part to update a previous title V permit for Plant Paradise with applicable requirements stemming from a recent source-specific State Implementation Plan (SIP) revision. Permit #V-07-018 was issued pursuant to Kentucky's Administrative Regulations (KAR) at 401 KAR 52:020 (title V regulations).

This Order contains EPA's response to Petitioners' request that EPA object to the November 1, 2007, permit on the basis that: (1) the permit fails to include a prevention of significant deterioration (PSD) analysis for the three main boilers (Units 1-3) for NO_x due to alleged modifications undertaken at Plant Paradise beginning in 1984 without TVA obtaining required PSD permits and Kentucky failed to respond to Petitioners' comments; (2) the permit does not require year-round operation of the selective catalytic reduction (SCR) system consistent with 401 KAR 50:055; (3) continuous opacity monitoring systems (COMS) should be installed on all three Units and that Method 9 is not sufficient to ensure compliance with the opacity requirements; (4) the permit fails to require a continuous emissions monitoring system (CEMS) for NO_x; (5) the particulate matter (PM) emissions monitoring from the coal washing and handling plant is not enforceable and is inadequate; (6) the permit fails to require reporting of all monitoring results from COMS or CEMS; (7) the permit fails to contain language allowing

for the use of any credible evidence; and (8) the permit fails to include a case-by-case maximum achievable control technology (MACT) determination for Units 4-6 for the industrial boiler national emissions standards for hazardous air pollutants (NESHAPs).

Based on a review of the Petition and other relevant materials, including the TVA permit and permit record, and relevant statutory and regulatory authorities, I grant in part and deny in part the Petition requesting that EPA object to the TVA Permit. I grant on issues 1, 3, 4 and 5, above.

I. STATUTORY AND REGULATORY FRAMEWORK

Section 502(d)(1) of the Act, 42 U.S.C. § 7661a(d)(1), calls upon each state to develop and submit to EPA an operating permit program intended to meet the requirements of title V of the CAA. The Commonwealth of Kentucky¹ originally submitted its title V program governing the issuance of operating permits in 1993, and EPA granted full approval on October 31, 2001. 66 Fed. Reg. 54,953. The program is now incorporated into Kentucky's Administrative Regulations at 401 KAR 52:020. All major stationary sources of air pollution and certain other sources are required to apply for title V operating permits that include emission limitations and other conditions as necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable State Implementation Plan (SIP). CAA §§ 502(a) and 504(a), 42 U.S.C. §§ 7661a(a) and 7661c(a).

The title V operating permit program does not generally impose new substantive air quality control requirements (which are referred to as "applicable requirements"), but does require permits to contain monitoring, recordkeeping, reporting, and other conditions to assure compliance by sources with existing applicable requirements. 57 Fed. Reg. 32,250, 32,251 (July 21, 1992) (EPA final action promulgating Part 70 rules). One purpose of the title V program is to enable the source, EPA, states, and the public to better understand the applicable requirements to which the source is subject and whether the source is complying with those requirements. Thus, the title V operating permit program is a vehicle for ensuring that existing air quality control requirements are appropriately applied to facility emission units and that compliance with these requirements is assured.

For a major modification of a major stationary source, applicable requirements include the requirement to obtain a preconstruction permit that complies with applicable new source review requirements (e.g., PSD). Part C of the CAA establishes the PSD program, the preconstruction review program that applies to areas of the country that are not designated as nonattainment for National Ambient Air Quality Standards (NAAQS). CAA §§ 160-169, 42 U.S.C. §§ 7470-7479. In such areas, a major stationary source may not begin construction or undertake certain modifications without first obtaining a PSD permit. CAA § 165(a)(1), 42 U.S.C. § 7475(a)(1). The PSD program analysis must address two primary and fundamental elements before the permitting authority may issue a PSD permit: (1) an evaluation of the

¹ The Commonwealth of Kentucky Environmental and Public Protection Cabinet (Kentucky Cabinet) oversees the Kentucky Division for Air Quality (KDAQ) which is the permitting authority for title V and PSD permits in Kentucky.

impact of the proposed new or modified major stationary source on ambient air quality in the area, and (2) an analysis ensuring that the proposed facility is subject to the "best available control technology" (BACT) for each pollutant subject to regulation under the PSD program. CAA § 165(a)(3),(4), 42 U.S.C. § 7475(a)(3), (4); see also 401 KAR 51:017 (Kentucky's PSD program). The BACT analysis is further discussed in Section III of this Order.

EPA has promulgated two largely identical sets of regulations to implement the PSD program. One set, found at 40 Code of Federal Regulations (CFR) § 52.21, contains EPA's own federal PSD program, which applies in areas without a SIP-approved state PSD program. The other set of regulations, found at 40 CFR § 51.166, contains requirements that state PSD programs must meet to be approved as part of a SIP. In 1989, EPA approved Kentucky's PSD rules into the SIP as meeting these requirements in relevant part. 54 Fed. Reg. 36,307 (September 1, 1989); see also 40 CFR § 52.931.² Thus, the applicable requirements of the Act for major modifications at major sources, such as at TVA Plant Paradise, include the requirement to comply with the applicable PSD requirements under the Kentucky SIP. See e.g., 40 CFR § 70.2.³ In this case, the Commonwealth's rules require a source to apply for a PSD permit which is then incorporated into the existing title V permit as a revision to the title V permit. 401 KAR 52:020.

Under section 505(a), 42 U.S.C. § 7661d(a), of the CAA and the relevant implementing regulations (40 CFR § 70.8(a)), states are required to submit each proposed title V permit, and certain revisions to such permits, to EPA for review. Upon receipt of a proposed permit, EPA has 45 days to object to final issuance of the permit if it is determined not to be in compliance with applicable requirements or the requirements of title V. 40 CFR § 70.8(c). If EPA does not object to a permit on its own initiative, section 505(b)(2) of the CAA provides that any person may petition the Administrator, within 60 days of the expiration of EPA's 45-day review period, to object to the permit. 42 U.S.C. § 7661d(b)(2), see also 40 CFR § 70.8(d). In response to such a petition, the CAA requires the Administrator to issue an objection if a petitioner demonstrates that a permit is not in compliance with the requirements of the CAA. 42 U.S.C. § 7661d(b)(2); see also 40 CFR § 70.8(c)(1), New York Public Interest Research Group (NYPIRG) v. Whitman, 321 F.3d 316, 333 n.11 (2nd Cir. 2003). Under section 505(b)(2), the burden is on the petition to make the required demonstration to EPA. Sierra Club v. Johnson, 541 F.3d. 1257, 1266-1267

² On February 10, 2006, EPA proposed to approve changes made to Kentucky's New Source Review (NSR) program consistent with EPA's 2002 NSR Reform Rules. 71 Fed. Reg. 6,988 (February 10, 2006). On July 11, 2006, EPA took final action approving Kentucky's NSR program incorporating changes made pursuant to EPA's 2002 NSR Reform Rules. 71 Fed. Reg. 38,990 (July 11, 2006). Kentucky's revisions to its NSR program consistent with NSR reform, became effective under Kentucky law on July 14, 2004, and were submitted to EPA as a SIP revision for approval in September 2004. For further information about rules incorporated into the Kentucky SIP, see http://www.epa.gov/region4/air/sips/ky/kytoc.htm.

³ Kentucky defines "federally applicable requirement" in relevant part to include a "federally enforceable requirement or standard that applies to a source." 401 KAR 52:001 § 1(15). Kentucky further defines "federally enforceable requirement," as "[s]tandards or requirements in the state implementation plan (SIP) that implement the relevant requirements of the Act, including revisions to that plan promulgated at 40 CFR Part 52." 401 KAR 52:001 § 1(34).

(11th Cir. 2008); Citizens Against Ruining the Environment v. EPA, 535 F.3d 670, 677-678 (7th Cir. 2008); Sierra Club v. EPA, 557 F.3d 401, 406 (6th Cir. 2009) (discussing the burden of proof in title V petitions); see also NYPIRG, 321 F.3d at 333 n.11. If, in responding to a petition, EPA objects to a permit that has already been issued, as is the case here, EPA or the permitting authority will modify, terminate, or revoke and reissue the permit consistent with the procedures set forth in 40 CFR §§ 70.7(g)(4) and (5)(i) - (ii), and 40 CFR § 70.8(d).

II. BACKGROUND

Existing Facility

TVA Plant Paradise is located in Drakesboro, Kentucky and construction of the facility began in the 1960s. Today, the facility consists of three cyclone-furnace coal-fired boilers, three distillate oil-fired heating boilers, eleven distillate oil-fired space heaters, three natural-draft cooling towers, and solid fuel, limestone, ash, and gypsum handling processes. KDAQ Statement of Basis (SOB) at 1. The facility is not a mine-mouth facility and coal is delivered to the facility by rail, truck and barge. *Id.* at 2. Most of the coal is cleaned in the coal wash plant. The three coal-fired boilers (referred to as Units 1-3) are equipped with staged overfire air and SCR modules to control emissions of NO_x. SCRs were installed on Unit 1 in 2001, Unit 2 in 2000, and Unit 3 in 2003. TVA March 2007 Application Update at 3-18, 3-21G. Units 1 and 2 are also equipped with venture-type limestone slurry flue gas desulfurization (FGD) scrubbers. Unit 3 is equipped with an electrostatic precipitator (ESP) and a wet limestone FGD scrubber. Units 1 and 2 were constructed before 1971. *Id.* at 2. Units 1 and 2 also have SO₂ allowances for the years 2007-2011.

Permit History

In May 1996, TVA submitted a title V permit application for Plant Paradise. A proposed permit was submitted to EPA for review on December 29, 2004 (Permit # V-04-024), and EPA issued an objection to that permit on February 28, 2005. TVA later requested that the permit be withdrawn and on June 23, 2006, KDAQ withdrew the proposed permit. KDAQ, TVA, and EPA subsequently resolved the issues raised in EPA's February 18, 2005 objection letter, and KDAQ initiated the process for developing a revised title V permit for Plant Paradise. On April 9, 2007, TVA submitted an update to the title V permit application. The update was submitted to address the objections made by EPA, as well as other updates made to the facility, such as the addition of the scrubber on Unit 3.

The draft permit was issued on June 14, 2007, and the permit was proposed to EPA on August 20, 2007. EPA received an extension of time in which to review the permit so as a result, EPA's 45-day review period began on September 10, 2007, and expired on October 25, 2007. The final title V permit was issued on November 1, 2007. Pursuant to the CAA, petitions must be received within 60 days after the expiration of the 45-day review period. 42 U.S.C. § 7661d(b)(2). Thus, any petitions were due on or before December 24, 2007. The Petition was stamped received by EPA on December 27, 2007, and EPA understands that it was dated and submitted to EPA on December 21, 2007. Thus, the Petition is timely.

III. EPA DETERMINATIONS

A. Petitioners' Claims Regarding PSD at Units 1-3

Petitioners' Comment. Petitioners state that the permit fails to include a full PSD review for the three main boilers, Units 1-3. Petitioners allege that PSD review applies due to modifications that were undertaken beginning in 1984 and for which PSD preconstruction permits were not obtained. Petition at 9. In support of their claim, Petitioners cite to EPA's enforcement case against TVA (In Re Tennessee Valley Authority, 9 E.A.D. 357, EAB 2000, "Final Order on Reconsideration"), and incorporate by reference the exhibits and pleadings associated with that action. Petitioners use the TVA EAB case as evidence that EPA made a "final determination" that major modifications occurred at TVA Paradise. Petition at 16. Petitioners identify projects on pages 9-10 of the Petition and claim that those modifications resulted in significant net increases in NO_x (based on actual-to-projected actual test), SO₂, and PM/PM₁₀ (according to the actual-to-potential test). Petition at 15. Petitioners' argument includes asserted reasons why the projects were "physical changes" that did not qualify for the routine maintenance, repair and replacement (RMRR) exemption. Petitioners also note that KDAQ "refused to respond to the substance of the comment" on this issue. Petition at 18.

EPA's Response. For the reasons discussed below, EPA grants the Petition and directs Kentucky to provide a complete response to the substance of the issues raised in Petitioners' July 31, 2007, comment letter to KDAQ (Petitioners' Exhibit 6 to the Petition).

On July 31, 2007, Petitioners provided KDAQ with detailed comments on the TVA Paradise permit revision alleging that PSD was an applicable requirement for Units 1-3 due to major modifications performed at those units that resulted in significant net emissions increases for NO_x. Petitioners' Exhibit 6 at 1-3. Petitioners provide supporting information regarding the specific modifications, citing primarily to In Re Tennessee Valley Authority, 9 E.A.D. 357, EAB 2000, "Final Order on Reconsideration" and the substantial record developed as part of that matter. In the July 31, 2007, public comment, Petitioners state that a full PSD review should apply for Units 1-3 for NO_x, and Petitioners recommend temporary BACT emission limits for NO_x.⁵ In response to these comments, KDAQ stated, "The Division is aware of the current enforcement action against TVA...To date, there is no judicial determination of the merits of TVA's alleged NSR violations." KDAQ Response to Comments (RTC) at 3-4. KDAQ concludes by stating that, "The U.S. EPA considers this an active enforcement case and is proceeding. Upon settlement or judicial ruling the Division will incorporate those terms and conditions into this permit." Id. at 4. Petitioners allege not only the substantive concerns raised during the public comment period, but also raise KDAQ's failure to respond to the substance of the public comments.

⁴ TVA subsequently filed a petition for review of the EAB decision. TVA v. EPA, 336 F.3d 1236 (11th Cir. 2003), rehearing en banc denied TVA v. Whitman, 82 Fed. Appx. 220, 2003 U.S. App. LEXIS 27278 (2003), petition for cert. denied Leavitt v. EPA, 541 U.S. 1030 (2004). ⁵ In the Petition, Petitioners also state that the modifications resulted in significant increases of SO₂ and PM/PM₁₀. Petition at 15. We note that the public comments raise only NO_x increases.

Kentucky's SIP-approved rules require that the permitting authority respond to comments submitted during the public comment period. 401 KAR 52:100 § 2(1)(b). It is a general principle of administrative law that an inherent component of any meaningful notice and opportunity for comment is a response by the regulatory authority to significant comments. Home Box Office v. FCC, 567 F.2d 9, 35 (D.C. Cir. 1977) ("the opportunity to comment is meaningless unless the agency responds to significant points raised by the public."). Accordingly, KDAQ has an obligation to respond to significant public comments.

Petitioners' comment was a significant comment because it raised an issue that KDAQ might have failed to incorporate an applicable requirement (including an emission limit requirement) into the TVA Paradise renewal permit in violation of the Clean Air Act, the Kentucky SIP and 40 CFR Part 70. KDAQ's response is not adequate because it does not address the substance of the comment. EPA concludes that KDAQ's failure to respond to this significant comment may have resulted in one or more deficiencies in the TVA Paradise renewal permit (where emission limitations were revised for Units 1-3). See In the Matter of Louisiana Pacific Corporation, Tomahawk, Wisconsin, Petition No. V-200-6-3 (Order on Petition) (November 5, 2007) at 5-6; see also In the Matter of CEMEX Inc., Lyons Cement Plant, Petition No. VIII-2008-01 (Order on Petition) (April 29, 2009) at 9-10; In the Matter of Midwest Generation, LLC Fisk Generating Station, Petition No. V-2004-1 (Order on Petition) (March 25, 2005) at 4-5. Further, EPA notes that at the time the permit was issued, EPA had no active enforcement lawsuit pending against TVA for modifications at Plant Paradise.

Therefore, I grant the petition on this issue and order KDAQ to adequately address Petitioners' comment that PSD is an applicable requirement for Units 1-3 as a result of major modifications previously performed that Petitioners allege resulted in significant net increases in NO_x. In evaluating Petitioners' comment that PSD is an applicable requirement for Units 1-3, KDAQ is directed to consider the information referenced in Petitioners' comments, including the factual record developed as part of the EPA proceeding against TVA in *In re Tennessee Valley Authority*, 9 E.A.D. 357 (EAB 2000) as it pertains to Plant Paradise, and other appropriate information. Should KDAQ determine that PSD is an applicable requirement for Units 1-3, KDAQ should take action to revise the permit to include a compliance schedule for addressing those requirements.

B. Petitioners' Claims Regarding Year-Round Operation of the SCRs

Petitioners' Comment. Petitioners allege that 401 KAR 50:055 § 2(5) mandates that SCRs be operated year-round, but the permit does not require year-round operation, and thus, the permit is deficient. Petition at 18-19. Petitioners cite to Sierra Club v. EPPC and TGC, LLC and claim that "a noted utility industry law firm conceded that 401 KAR 50:055 § 2(5) ... would require the year-round operation of SCRs once they are installed." Petition at 19. Petitioners also disagree with KDAQ's response that TVA is not required to operate the SCRs year-round, and that it can purchase credits to offset emissions pursuant to 401 KAR 51:160, instead of (for example) operating the SCRs. Petition at 19.

EPA's Response. EPA disagrees with Petitioners' conclusion. Petitioner has not sufficiently demonstrated that the permit is out of compliance with the Act, and therefore, EPA denies the petition with respect to this issue.

The TVA Paradise facility has SCRs installed on all three boilers. SCR is a NO_x control technology that utilizes a catalyst to reduce NO_x to nitrogen and water. Kentucky rule 401 KAR 51:160, "NO_x Requirements for Large Utility and Industrial Boilers," is the primary applicable requirement governing installation, operation, and maintenance of NO_x controls for Units 1-3 at TVA Paradise. Permit at 2, 6 (Section B). These NO_x requirements stem from Kentucky's inclusion in the NO_x SIP Call. Additional NO_x requirements for Units 1-3 are discussed in the Acid Rain section of the permit (Section J; page 42-47). As explained by KDAQ in its response to comments,

The SCRs are not subject to an applicable standard other than 401 KAR 51:160, NO_x requirements for large utility and industrial boilers. 401 KAR 50:055, Section 2, Compliance with Standards and Maintenance Requirements, applies to sources subject to an emission standard. The only standard applicable to these units is that they have sufficient NO_x allowances to address emissions during the ozone control period of May through September of each year. There is no requirement for TVA to operate their SCRs during the ozone control period, since they could instead perchance allowances to comply with 401 KAR 51:160...there is no permit limit that requires operation of the SCRs in order to preclude the applicability of an air pollutant standard.

KDAQ RTC at 3. In addition, Kentucky is part of the NO_x trading program (under the NO_x SIP Call) as well as the Acid Rain trading program. Thus, KDAQ concludes that there is no requirement for TVA to operate their SCRs during the ozone control period, since TVA could instead purchase allowances to comply with 401 KAR 51:160. *Id.*

Kentucky rule 401 KAR 50:055 § 2(5) is part of Kentucky's "General Compliance Requirements," and states,

At all times, including periods of start-up, 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.

⁶ On October 27, 1998, EPA finalized the "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone"— commonly called the "NO_x SIP Call." 63 Fed. Reg. 57356. The NO_x SIP Call was designed to mitigate significant transport of NO_x, one of the precursors of ozone. For those states opting to meet the obligations of the NO_x SIP Call through a cap and trade program, EPA included a model NO_x Budget Trading Program rule in 40 CFR Part 96. Kentucky is included in the NO_x SIP Call trading program and implements the program through 401 KAR 51:001, 51:160 (for utilities), 51:180, 51:190, and 51:195. EPA approved Kentucky's NO_x SIP Call rules into the SIP on April 11, 2002. 67 Fed. Reg. 17624.

Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the cabinet which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

KDAQ does not interpret this provision as applying to NO_x, as was explained above in its response to comments. Petitioners appear to argue that year-round operation of the SCRs is consistent with "good air pollution control practices." Petition at 18-19. Thus, Petitioners' argument relies exclusively on their own interpretation of how 401 KAR 50:055, and how they would apply such a provision. However, Petitioners do not explain how KDAQ's interpretation is unreasonable or inconsistent with applicable requirements. Petitioners also cite to Sierra Club v. EPPC, for support, but provide no specific citation or date for the particular opinion being referenced by Petitioners. Nonetheless, Petitioners suggest that the case supports Petitioners' interpretation that 401 KAR 50:055 requires year-round operation of the SCRs. This Sierra Club administrative decision was subsequently challenged in the Kentucky Court system. In the most recent (unpublished) opinion, issued by the Kentucky Court of Appeals on September 18, 2008, the Kentucky Court overruled the administrative decision on the NO_x issues. In any event, Petitioners failed to demonstrate that the Sierra Club v. EPPC matter makes any statements supporting Petitioners' interpretation of 401 KAR 50:055 as requiring year-round operation of the SCRs at TVA Paradise. Additionally, Petitioners do not explain how KDAQ's interpretation of 401 KAR 50:055 is not reasonable in light of the Sierra Club v. EPPC matter.

Notably, the TVA Paradise permit does include the obligation to comply with the general compliance requirements in 401 KAR 50:055. Permit at 32 (Section E, "Source Control Equipment Requirements"). However, Petitioners have not pointed to anything in the plain text of 401 KAR 50:055, or in KDAQ's interpretation or application of 401 KAR 50:055 indicating that KDAQ's interpretation of this provision is not consistent with applicable requirements. Thus, Petitioners have not demonstrated that the permit is inconsistent with the Act, and therefore, EPA denies the petition with respect to this issue.

C. Petitioners' Claims Regarding Opacity and Monitoring

Petitioners' Comment. Petitioners state that 50 CFR Part 51, Appendix P requires that continuous opacity monitoring systems (COMS) be installed on Units 1-3. Petition at 19-20. Petitioners further state that the COMS must be used to monitor compliance with the opacity limits on Units 1 and 2 because those opacity limits do not incorporate a monitoring requirement and therefore, 40 CFR § 70.6(a)(3)(i)(b) applies. Petition at 19-20. Petitioners explain that the permit includes monitoring by Method 9 which is not sufficient to demonstrate continuous

⁷ The appeal of a merged PSD/title V permit issued to the Thoroughbred Generating Company, which is the subject of the *Sierra Club v. EPPC* case cited to by Petitioners, was initiated at the administrative level and proceeded through the Kentucky Courts to the Kentucky Court of Appeals. The Kentucky Court of Appeals issued the last decision in that case on September 18, 2008. Petitioners appear to cite to the last administrative decision – the Kentucky Natural Resources and Environmental Protection Cabinet Secretary's Findings, Conclusions of Law, and Final Order, issued on April 11, 2006.

compliance because it can only be conducted under specified conditions. Petition at 20. Petitioners also allege (in a one-sentence footnote) that the permit must also require a continuous emissions monitoring system (CEMS) for NO_x. Petition at 20, fn 4.

EPA's Response. EPA agrees in part with Petitioners' concerns regarding the monitoring requirements for opacity at Units 1 and 2, and agrees with Petitioners' concerns regarding the NO_x CEMS.

1. Opacity Issues

The opacity limits for Units 1-3 are 61%, 50%, and 20%, respectively. Permit at 2, 6 (Section B).8 With regard to Units 1 and 2, KDAQ and TVA entered into an Agreed Order on June 27, 1991, requiring that TVA provide KDAQ with an alternative method for determining compliance with the opacity limits within 90 days after issuance of the permit. In the Matter of Natural Resources and Environmental Protection Cabinet and Tennessee Valley Authority. before the Commonwealth of Kentucky Natural Resources and Environmental Protection Cabinet, Agreed Order (June 26, 1991). That compliance plan was submitted to KDAQ on November 29, 2007, and sets forth the specific opacity monitoring requirements in flow chart and summary form. Paradise Fossil Plant Unit 1 and Unit 2 Opacity Monitoring Plan (November 29, 2007). Specifically, the plan explains that various opacity monitoring is required during forced and planned outages, but that no opacity monitoring is required when both units are operating. Id. at 6. In its response to the Petition, TVA further explained that, "COMs could not be used on Units 1 and 2 and KDAQ and TVA have been working toward establishing alternative monitoring methods." Letter from Gregory R. Signer, TVA to Stephen L. Johnson, EPA, Re: Title V permit Petition – TVA Paradise Fossil Plant, dated February 25, 2008 ("TVA Response to Petition") at 5. TVA explained the technical concerns with installing COMS on units utilizing wet scrubbers, which is discussed further below, and which was the basis of KDAQ's alternative monitoring. TVA Response to petition at 5. Further, TVA explains that for Units 1 and 2, the permit requires monitoring of the flow rate of the scrubbing liquor and pressure drop across the scrubber at least once per shift to verify the performance of the scrubbers on Units 1 and 2. *Id.*; see also Permit at 3 (Section B.4.g). In addition, quarterly stack testing at Units 1 and 2 is required to verify compliance with the PM emission limit. Permit at 3.

For Unit 3, the facility may perform opacity testing pursuant to reference test Method 9; however, the facility is also required to install and operate a continuous opacity monitoring system (COMS). Permit at 8 (Section B.4.b). The COM is required to ensure compliance with the PM emission limit and the facility is also required to evaluate the relationship between opacity and PM so as to ensure that the PM emissions are in compliance when opacity is equal to or less than 20%. *Id.* A compliance plan was also submitted for Unit 3 on April 29, 2008, which explains TVA's evaluation of visible emissions from Unit 3 and the PM mass limit, and the role of control technology in meeting the opacity and PM mass emission limits.

⁸ For background on the Unit 1 and 2 opacity limits, see 52 *Fed. Reg.* 31791 (August 24, 1987) and 53 *Fed. Reg.* 30998 (August 17, 1988).

Petitioners first argue that 40 CFR Part 51, Appendix P requires installation of COMS for Units 1-3 at TVA Paradise. Appendix P, "Minimum Emission Monitoring Requirements," sets forth the minimum requirements for continuous emission monitoring and recording that each SIP must include in order to be approved under 40 CFR § 51.165(b). 40 CFR Part 51, Appendix P at § 1.0. Appendix P discusses required monitoring for opacity and identifies COMS as the appropriate monitoring device for fossil fuel-fired steam generators. Id. at § 2.1.1. However, Appendix P also provides some exceptions to that, including Section 6.0 which discusses "Special Considerations," and notes that, "[t]he State plan may provide for approval, on a caseby-case basis, of alternative monitoring requirements different from the provisions of parts 1-5 of this appendix if the provisions of this appendix (i.e., the installation of a continuous emission monitoring system) cannot be implemented by a source due to physical plant limitations or extreme economic reasons." In addition, Section 6.1, Appendix P discusses the use of alternative monitoring requirements "when installation of a continuous monitoring system....would not provide accurate determinations of emissions" due to the other types of control devices and/or processes operating at the facility. Thus, contrary to Petitioners' contention, Appendix P does not mandate installation of COMS on Units 1 and 2. In the TVA Response to Petition, TVA explains that TVA availed itself of the Section 6.1 options for seeking an alternative monitoring requirement for opacity for Units 1 and 2. TVA Response to Petition at 5. The basis for seeking alternative monitoring is because Units 1 and 2 have wet plumes emanating from the venturi scrubbers used to control SO₂ and particulates, which is not consistent with installation of COMS. Id. Specifically, the wet plume interferes with the performance of the COMS, and the installation of the COMS before the wet scrubber would only measure uncontrolled PM as opposed to opacity. This is also noted by KDAQ in the RTC. KDAQ RTC at 6. For this reason, TVA and KDAQ agreed to monitoring scrubber fluid flow and pressure drop as a way to evaluate the effectiveness of the control equipment. Id.

Petitioners also raise concerns that Method 9 is insufficient to demonstrate compliance because of the conditions requiring accurate use of Method 9. Petition at 20. The applicable requirements state that, "Compliance with opacity standards in the administrative regulations of the Division for Air Quality shall be determined by Method 9 of Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as may be provided for by administrative regulation for a specific category of sources." 401 KAR 50:055 § 2(3); see also KDAQ RTC at 6. In addition, Method 9 is a generally accepted reference test method for opacity. See e.g., http://www.epa.gov/ttn/emc/promgate/m-09.pdf (last visited April 22, 2009) (explaining the Method 9 testing procedure and noting that it is the reference test method for New Source Performance Standards). Thus, Petitioners have not demonstrated that Method 9 is insufficient to demonstrate compliance.

EPA does agree, however, that the TVA Paradise permit contains inadequate monitoring for opacity from Units 1 and 2 because it does not appear to require any opacity monitoring during normal operation of the facility. See Paradise Fossil Plant Unit 1 and Unit 2 Opacity Monitoring Plan. Simply because the facility is operating under normal operating conditions does not excuse the facility from demonstrating compliance with the opacity requirements for Units 1 and 2. EPA does not agree that it is reasonable to allow monitoring only during periods of forced or planned outages. The permit does also require quarterly stack tests for PM, but no apparent direct monitoring or tests for opacity. This monitoring scenario is not consistent with

40 CFR § 70.6(a)(3)(i)(B) and 401 KAR 52:020 § 10 (incorporating by reference Cabinet Provisions and Procedures for Issuing Title V Permits ("Cabinet Procedures"). Section 70.6(a)(3)(i)(B) explains that each permit must contain the following requirements regarding monitoring: "[w]here the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring...periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit." *Id*. Kentucky's rules also require, "If the applicable requirement does not require periodic testing or monitoring, the permit shall contain periodic monitoring sufficient to yield reliable data from the relevant time period representative of the source's compliance with the permit." Cabinet Procedures at 7. Therefore, the TVA Paradise permit fails to contain monitoring to assure compliance with the opacity limits for Units 1 and 2 during normal facility operations. *See In the Matter of Wisconsin Public Service Corporation – Weston Generating Station*, Petition No. V-2006-4 (Order on Petition) (December 19, 2007) at 9.

For the reasons discussed above, the Petition is granted for KDAQ to review the monitoring requirements for opacity for Units 1 and 2 and revise the permit, if necessary, to ensure that the permit requires some monitoring for opacity during normal facility operations that that assures compliance with permit terms and conditions regarding opacity.

2. NO_x CEMS

With regard to Petitioners' statement that NOx CEMS are required for Units 1 and 2 (Petition at 26, ftnt 4), Petitioners also noted this comment in their July 31, 2007 comments to KDAQ on the draft permit. Petitioners' Exhibit 6 at 5, ftnt 4. This comment was a significant comment because it relates to whether the permit contains the proper monitoring requirements for NO_x emissions. KDAQ did not respond to this comment. Consistent with Section J (Acid Rain) and Section G(e)2., Plant Paradise is required to comply with all requirements and conditions of title IV of the CAA (the Acid Rain Program). In regulations promulgated pursuant to title IV, NO_x CEMS are required for sources subject to title IV. 40 CFR § 75.10(a)(2). However, the permit conditions are not clear on the requirement of NOx CEMS for Units 1 and 2. Thus, EPA grants the Petition on this issue and directs KDAQ to respond to the comment that NO_x CEMS are required for Units 1 and 2, providing an explanation that includes an evaluation of the CAA title IV requirements, Part 75 requirements, and the requirements pertaining to monitoring in Part 70.

D. Petitioners' Claims Regarding Enforceability of the PM Emission Limit for the Coal Washing and Handling Plant

Petitioners' Comment. Petitioners allege that monitoring for PM emissions from the coal washing and handling plant (emission units 22, 23, 25-31, 35, 39, and 40) is not enforceable (see, Permit at 18 (Section (B)2.a-c). Petition at 21. Petitioners do not agree that monitoring the

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⁹ Petitioners refer to "GACT5" (Petition at 21), and it is not clear from the Petition which units the Petitioners are discussing. However, TVA explains in its February 25, 2008, response to the petition that "GACT5" pertains to the coal washing and handling plant. Thus, EPA's review of the Petition focused on the claims as they pertained to the coal washing and handling plant.

amount of coal processed and the hours of operation, in conjunction with an enclosure and foam suppression, are sufficient to ensure compliance pursuant to 40 CFR § 70.6(a)(3)(i)(B). Petitioners cite to the *Midwest Generation Frisk* title V petition order in support of their claim. Petition at 21.

EPA's Response. EPA agrees with Petitioners' claims that the permit provides insufficient information to assure that TVA is in compliance with the PM emission limits for the coal washing and handling plant.

The TVA Paradise permit contains PM emission limits for all the emission units that comprise the coal handling and washing plant. Permit at 7-8. The PM limits are different for each unit although they stem from the same applicable requirements: 401 KAR 61:020 ("Existing Process Operations") and 401 KAR 60:005 ("incorporating by reference 40 CFR Part 60, Subpart Y). Petitioner does not contend that the PM emission limits contained in the permit are inconsistent with applicable requirements. Petitioners' concern is that the PM limits are not enforceable as a practical matter. With regard to the monitoring and control technology associated with the PM limits, the permit requires records of material received and processed and hours of operation on a monthly basis (and maintained as a rolling 12-month total) and annual records estimating tonnage hauled for plant roadways. Control devices for these units include enclosure, residual carryover of foam dust suppression, and wet and foam suppression. Finally, the units also have visible emissions (opacity) limits of 20%. Permit at 18.

Despite these various requirements, the permit lacks specific instructions on how the monitoring of such parameters (hours of operation and quantity of material processed/received) is to be used to determine the emissions of PM for compliance demonstration purposes. Neither the permit nor the SOB contain information explaining how the monitoring requirements in the permit are consistent with applicable requirements and will assure compliance with permit terms and conditions. Federal law requires all title V permits to contain "Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance." 40 CFR § 70.6(a)(1); see also, 42 U.S.C. § 7661c(c), In the Matter of Citgo Refining and Chemicals Company, L.P., West Plant, Corpus Christi, Texas, Petition No. VI-2007-01 (Order on Petition) (May 28, 2009) at 6-7. This obligation is also recognized in 401 KAR 52:020. While the permit contains PM emission limits as well as operational requirements, the permit fails to provide necessary information linking the two types of conditions such that the regulated entity, the public, or the permitting authority can be assured that the facility is in compliance with the stated emission limit.

For the reasons discussed above, EPA grants the petition on this issue for KDAQ to identify the specific method(s) to be used by TVA in demonstrating compliance with the PM emission limits for the coal washing and handling plant, as well as to provide an adequate rationale for the chosen method(s) (this could be in the statement of basis or the permit itself).

E. Petitioners' Claims Regarding Reporting

Petitioners' Comment. Petitioners state that Condition F(5) of the permit excuses the permittee from reporting all COMS and CEMS data. Petition at 21-24. Petitioners cite to CAA

§ 504(a) and 40 CFR § 70.6(a)(3)(iii)(A) for the proposition that "any required monitoring," (emphasis added) means that all monitoring data must be provided to the permitting authority. In support of their claims, Petitioners cite to Eleventh Circuit and D.C. Circuit cases, a letter from EPA Region 4 to the Georgia Environmental Protection Division, and a proposed rule, 56 Fed. Reg. 21,712, 21,713 (May 10, 1991) ("Operating permit program"). Petition at 23-24. Petitioners also state that KDAQ ignored the substance of their comments.

EPA's Response. Petitioners have not demonstrated that the permit is out of compliance with the Act, and therefore, EPA denies the petition with respect to this issue.

Reporting requirements are discussed in 40 CFR § 70.6(a)(3) as well as 401 KAR 52:020 (Kentucky's title V program) and 401 KAR Chapter 59 (New Source Standards), as well as the Cabinet Procedures at pg. 8. The TVA Paradise permit references these requirements. For the three boilers, reporting requirements are noted in the permit. Permit at 4 and 9. Under the permit, TVA is required to maintain detailed records of its operations, but is only required to provide written reports of excess emissions on a quarterly basis – including the nature and cause of the excess emissions if known. Permit at 4 (Section B(6)a.i). Additionally, Section F(5) of the permit states that, "Summary reports of any monitoring required by this permit, other than continuous emission or opacity monitors, shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit." Permit at 33. Section F(6) of the permit refers to 401 KAR 59:005 for reporting requirements for continuous emission and opacity monitors. Permit at 34. 401 KAR 59:005 § 3(3) identifies the specific reporting requirements for data recorded from CEMS and COMS. The rule requires

(a) The magnitude of excess emissions computed in accordance with Section 4(8) of this administrative regulation, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; (b) All hourly averages shall be reported for sulfur dioxide and nitrogen oxides monitors. The hourly averages shall be made available on computer tape or cards; (c) Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted; (d) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; (e) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

401 KAR 59:005 § 3(3). In addition, Section F(2) of the permit states, "Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection..." Permit at 33. Section F also outlines obligations for semi-annual reports as well as annual certification requirements. Permit at 34. Further, Section B of the permit (as applicable to Units 1-3), requires additional reporting specifically for the COMS and CEMS

data. Permit at 4-5 and 9-10. KDAQ responded to Petitioners' comments by identifying the requirements summarized above. KDAQ RTC at 9.

In support of its claim, Petitioners point to a letter from Region 4 to the Georgia Environmental Protection Division (GA EPD), as well as a preamble of a proposed rulemaking on title V implementation (56 Fed. Reg. 21,712, 21,713 (May 10, 1991). With regard to the Georgia letter, this issue has been raised in several title V petitions regarding facilities in Georgia and in all of those cases, EPA denied the petition, finding that the reporting was adequate even though every point of data generated was not required to be provided to GA EPD. See, e.g., In the Matter of Shaw Industries, Inc., Petition No. IV-2001-9 (Order on Petition) (November 15, 2002); In the Matter of Seminole Road Landfill, Petition No. IV-2001-3 (Order on Petition) (June 5, 2002). The rule preamble cited to by Petitioners articulates the general proposition that permitting authorities have discretion with regard to the types of reporting they may require, but that the reports should be sufficient for the permitting authority to assess compliance. With regard to Kentucky's requirements, and the requirements included in the TVA Paradise permit, far more is required than mere excess emissions reporting. For example, Kentucky's rules require reporting of hourly averages of NO_x and SO₂. For NO_x and SO₂, such hourly data would include at least four data points per hour. This could include more than 2200 data points (corresponding with the number of hours in a quarter), which is a large quantity of emissions information. Petitioners have not demonstrated that this information is insufficient for the permitting authority to verify compliance with NO_x and SO₂. Further, Petitioners have not demonstrated that the regular reports required by Kentucky's rules and the TVA Permit are insufficient for KDAQ to determine compliance with the permit, or that the permit fails to include an applicable requirement.

For the reasons discussed above, the Petition is denied as to this issue.

F. Petitioners' Claims Regarding Credible Evidence

Petitioners' Comment. Petitioners allege that the permit must contain language that allows for the use of any credible evidence and that it is not enough for the permit to merely not preclude use of credible evidence. Petition at 25-26. Petitioners cite to two letters from EPA from 1998 in support of their claim.

EPA's Response. EPA disagrees with Petitioners' conclusion. Petitioners have not sufficiently demonstrated that the permit is out of compliance with the Act, and therefore, EPA denies the petition with respect to this issue.

Since 1970, Section 113(e) of the CAA has stated that EPA may bring an enforcement action based on "any information." 42 U.S.C § 7413(e). In 1990, the United States Congress revised Section 113(a) to clarify that "any credible evidence" could be used for compliance and enforcement purposes. Following the 1990 CAA Amendments, which included many revisions in addition to those in section 113, EPA promulgated the final Credible Evidence Revisions (CER). 62 Fed. Reg. 8314 (February 24, 1997). EPA promulgated the CER to clarify that any credible evidence could be used for compliance with the new title V permit program, as well as other compliance and enforcement efforts. As explained in the preamble, the CER "merely

removes what some have construed to be a regulatory bar to the admission of non-reference test data to prove a violation of an emission standard, no matter how credible and probative those data are that a violation has occurred." 62 Fed. Reg. at 8315. Specifically, the CER was "designed to clarify that non-reference test data can be used in enforcement actions, and to remove any potential ambiguity regarding this data's use for compliance certifications under Section 114 and title V of the [CAA]." 62 Fed. Reg. at 8314.

The CER also included changes to the CFR. Specifically, 40 CFR § 51.212(c) was revised to read that, "[f]or the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, the [SIP] must not preclude the use, including the exclusive use, of any credible evidence or information..." Thus, Petitioners' statement that "It is not enough that the permit merely not preclude the use of credible evidence" (Petition at 25) is inconsistent with the CER and the federal regulations.

The issue of the CER and the Kentucky SIP is one that EPA addressed in 2007 in denying a petition for rulemaking seeking a revision to the Kentucky SIP regarding the CER. See Letter from Stephen L. Johnson, EPA Administrator, to Robert Ukeiley, June 29, 2007 (Response to Petition for Rulemaking on Credible Evidence Revisions in Kentucky). Both Kentucky and EPA interpret the Kentucky SIP consistent with the CER and specifically, 40 C.F.R. § 51.212(c), as not precluding any entity, including EPA, Kentucky, or citizens, from using any credible evidence to enforce emission standards, limitations, conditions or any other provision of the Kentucky SIP. 10

Petitioners do not suggest that the permit precludes the use of credible evidence, only that the permit should affirmatively allow for the use of credible evidence. However, Petitioners point to no applicable requirement that mandates such language in the permit, and federal regulations at 40 CFR § 51.212(c), state the opposite of Petitioners' suggestion. The absence of language regarding the use of credible evidence in the title V permit does not preclude its use in demonstrating compliance. See e.g., Matter of Motiva Enterprises Final Order, Petition Number: II-2001-05 (Order on Petition) (September 24, 2004); and In the Matter of Starrett City Final Order, Petition Number: 11-2001-01 (Order on Petition) (December 16, 2002). The TVA

The Kentucky SIP also includes language indicating that Kentucky can use "any information" to enforce its SIP. See, e.g., 40 KAR 50:055 (concerning compliance); and 401 KAR 50:060 (concerning enforcement). These two provisions were incorporated into the Kentucky SIP on May 4, 1989 (54 Fed. Reg. 19169) and July 12, 1982 (47 Fed. Reg. 30059), respectively. Further, Kentucky's regulations include the incorporation by reference of 40 C.F.R. §§ 60.11 and 61.12 in 401 KAR 60:005, § 2(1); and 401 KAR 57:002, § 2(1), respectively. These provisions are not in the Kentucky SIP because regulations pertaining to new source performance standards and hazardous air pollutants are not included as part of the SIP for any state.

Petitioners excerpt two letters from EPA to state permitting authorities in Ohio and Indiana that contain references to credible evidence; however, neither supports Petitioners' claim that the TVA permit fails to include an applicable requirement. Both letters merely explain EPA's position on the CER, which is discussed in this Order, and also codified in 40 CFR § 51.212(c) and 113(e) of the CAA.

Paradise title V permit does not preclude the use of any credible evidence in determining compliance with applicable requirements. Petitioners point to no language in the permit that implies or affirmatively disallows the use of any credible evidence.

For the reasons discussed above, the Petition is denied as to this issue.

G. Petitioners' Claims Regarding the National Emission Standard for Hazardous Air Pollutants for Industrial Boilers

Petitioners' Comment. Petitioners assert that Units 4-6 (the Building Heat Boilers) are subject to the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for industrial boilers that was vacated. Petition at 26. As a result, Petitioners assert that the "MACT hammer" found in CAA Section 112(j) applies such that the permit must contain a case-by-case MACT determination for Units 4-6. Petitioners also assert that they failed to include this issue in their comments to KDAQ because "the basis for the MACT Hammer did not arise until after the comment period closed, when the Court of Appeals vacated the NESHAP, triggering the MACT Hammer requirement." Petition at 26. Petitioners also note that they did raise a comment to Kentucky about the then-existing NESHAP.

EPA's response. The Petition is denied on this issue because the issues raised by Petitioner fail to meet the threshold requirements established by Section 505(b)(2) of the CAA.

As a threshold matter, this issue was not raised during the public comment period on the draft permit. Pursuant to Section 505(b)(2) of the CAA, a "petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting agency." (emphasis added); see also 40 CFR § 70.8(d). Thus, not only must issues be raised during the public comment period, but they must be raised with enough detail for the permitting authority to understand the precise matter of concern to the commenter. See In the Matter of Colorado Interstate Gas Company, Latigo Station, Petition No. VIII-2005-01 (Order on Petition) (February 17, 2006) at 4-5; see also, Mossville Envtl. Action Now v. EPA, 370 F.3d 1232, 1238-40 (D.C. Cir. 2004). The Act provides for an exception to this threshold requirement if "the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period" or if the grounds for such objections arose after such period. 42 U.S.C. § 7661d(b)(2); see also 40 CFR § 70.8(d).

Petitioners submitted comments to KDAQ on July 31, 2007, during the public comment period on the draft permit (the comment period closed on August 3, 2007). Petitioners' Exhibit 6. Petitioners' July 31, 2007 comment letter includes a comment stating that Subpart 5D is applicable to the boilers; however, the comment does not raise the vacatur of Subpart 5D or the MACT hammer issues raised in the Petition. Petitioners' Exhibit 6 at 7-8. Petitioners attempt to explain the discrepancy in their Petition to EPA by stating that the vacatur occurred after the

Petitioners provide no citations to either the NESHAPs at issue or the Court decision in their Petition. Petition at 26. KDAQ's RTC on this issue references 40 CFR Part 63, Subpart DDDDD (5D) and EPA's evaluation was focused on Subpart 5D. This MACT is commonly referred to as the "Boiler MACT" and Petitioners discuss the "NESHAP for industrial boilers."

close of the comment period and argue that they did raise a MACT issue. Petition at 26. However, Petitioners' allegations regarding the timing are not correct. Subpart 5D was vacated by the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) on June 8, 2007 (NRDC v. EPA, 489 F.3d 1250 (D.C. Cir. 2007)). The D.C. Circuit Court mandate effectuating the vacatur was issued on July 30, 2007. NRDC v. EPA, No. 04-1385 (D.C. Cir., July 30, 2007). The comment period closed August 3, 2007; thus Petitioners had an opportunity to review the June 2007 decision and include relevant comments in their comment letter. Further, because the mandate issued before the close of the comment period, Petitioners did have the opportunity to address the impact of the mandate issuance in their comments.

Thus, Petitioners have failed to meet the threshold requirements in CAA Section 505(b)(2) and 40 CFR § 70.8(d) for raising this issue in this title V Petition.

IV. CONCLUSION

For the reasons set forth above, and pursuant to Section 505(b) of the CAA and 40 CFR § 70.8(d), I hereby grant in part and deny in part the issues in the Petition received by EPA on December 27, 2007.

7 13 09 Dated

Lisa P. Jackson Administrator