

BEFORE THE ADMINISTRATOR  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:	)	
AMERICAN ELECTRIC POWER SERVICE	)	
CORPORATION, SOUTHWEST ELECTRIC	)	
POWER COMPANY,	)	
JOHN W. TURK PLANT, FULTON, ARKANSAS	)	ORDER RESPONDING TO
	)	PETITIONERS' REQUEST
	)	THAT THE
	)	ADMINISTRATOR
	)	OBJECT TO THE
Permit Number 2123-AOP-RO	)	ISSUANCE OF A TITLE V
	)	OPERATING PERMIT
ISSUED BY ARKANSAS DEPARTMENT OF	)	
ENVIRONMENTAL QUALITY ON	)	
<u>NOVEMBER 5, 2008</u>	)	Petition Number VI-2008-01

ORDER DENYING IN PART AND GRANTING IN PART  
PETITION FOR OBJECTION TO PERMIT

On November 24, 2008, the United States Environmental Protection Agency (EPA) received a petition from Environmental Integrity Project, Sierra Club and Audubon (Petitioners) pursuant to section 505(b)(2) of the Clean Air Act (CAA or Act), 42 U.S.C. § 7661d(b)(2). The petition requests that EPA object to the title V operating permit issued by the Arkansas Department of Environmental Quality (ADEQ) on November 5, 2008, to American Electric Power Service Corporation (AEP), Southwest Electric Power Company (SWEPCO), for the John W. Turk, Jr. power plant in Fulton, Hempstead County, Arkansas (Turk plant). Permit Number 2123-AOP-RO is a merged CAA prevention of significant deterioration (PSD) construction permit and a CAA title V operating permit issued pursuant to Chapter 19 of the Arkansas Plan of Implementation of Air Pollution Control (PSD regulations), and Chapter 26 of the Arkansas Operating Air Permit Program (title V regulations).

The Petitioners have requested that the Administrator object to the permit because the permit is deficient and does not comply with the CAA. The Petitioners allege that: (1) the best available control technology (BACT) analysis for the Turk plant's PSD permit is flawed; (2) the maximum available control technology (MACT) analysis is flawed; (3) the permit fails to assure compliance with, and practical enforceability of, the emission limits and standards required for PSD permits and title V of the Act; and (4) EPA should object to the permit because it fails to regulate carbon dioxide (CO<sub>2</sub>) and greenhouse gas (GHG) emissions from the Turk plant.

Based on a review of the Petition and other relevant materials, including the 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 AEP permit.

## 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 CAA title V. EPA granted interim approval to Arkansas for the title V (part 70) operating program on September 8, 1995. 60 FR 46771 (September 8, 1995). EPA granted full approval to Arkansas' operating permit program on October 9, 2001. 66 FR 51312 (October 9, 2001). The program is now incorporated into Arkansas' Operating Air Permit Program at Chapter 26.

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 such other conditions as are necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable State Implementation Plan (SIP). *See* 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 (referred to as “applicable requirements”), but does require permits to contain monitoring, recordkeeping, reporting, and other requirements to assure compliance by sources with applicable emission control requirements. 57 FR 32250, 32251 (July 21, 1992) (EPA final action promulgating Part 70 rule). One purpose of the title V program is to “enable the source, states, EPA, and the public to better understand the requirements to which the source is subject, and whether the source is meeting those requirements.” *Id.* Thus, the title V operating permits program is a vehicle for ensuring that air quality control requirements are appropriately applied to facility emission units and that compliance with these requirements is assured.

Under section 505(a), 42 U.S.C. § 7661d(a), of the CAA and the relevant implementing regulations (40 C.F.R. § 70.8(a)), states are required to submit each proposed title V operating permit 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 under title V. 40 C.F.R. § 70.8(c). If EPA does not object to a permit on its own initiative, section 505(b)(2) of the Act provides that any person may petition the Administrator, within 60 days of expiration of EPA's 45-day review period, to object to the permit. 42 U.S.C. § 7661d(b)(2), *see also* 40 C.F.R. § 70.8(d). The petition must “be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting agency (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period).” Section 505(b)(2) of the Act, 42 U.S.C. § 7661d(b)(2). 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 C.F.R. § 70.8(c)(1); *New York Public Interest Research Group (NYPIRG) v. Whitman*,

321 F.3d 316, 333 n.11 (2<sup>nd</sup> Cir. 2003). Under section 505(b)(2), the burden is on the petitioner to make the required demonstration to EPA. *Sierra Club v. Johnson*, 541 F.3d 1257, 1266-1267 (11<sup>th</sup> Cir. 2008); *Citizens Against Ruining the Environment v. EPA*, 535 F.3d 670, 677-678 (7<sup>th</sup> Cir. 2008); *Sierra Club v. EPA*, 557 F.3d 401, 406 (6<sup>th</sup> 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, EPA or the permitting authority will modify, terminate, or revoke and reissue the permit consistent with the procedures set forth in 40 C.F.R. §§ 70.7(g)(4) and (5)(i) – (ii), and 40 C.F.R. § 70.8(d).

Where a petitioner's request that the Administrator object to the issuance of a title V permit is based in whole, or in part, on a permitting authority's alleged failure to comply with the requirements of its approved PSD program (as with other allegations of inconsistency with the Act), the burden is on the petitioners to demonstrate that the permitting decision was not in compliance with the requirements of the Act, including the requirements of the SIP.<sup>1</sup> Such requirements, as EPA has explained in describing its authority to oversee the implementation of the PSD program in states with approved programs, include the requirements that the permitting authority (1) follow the required procedures in the SIP; (2) make PSD determinations on reasonable grounds properly supported on the record; and (3) describe the determinations in enforceable terms. *See, e.g.*, 68 *Fed. Reg.* 9,892, 9,894-9,895 (March 3, 2003); 63 *Fed. Reg.* 13,795, 13,796-13,797 (March 23, 1998). EPA has approved the PSD programs into the SIPs of most states, including the state of Arkansas, and, as the permitting authority, Arkansas has substantial discretion in issuing PSD permits. Given this, in reviewing a PSD permitting decision, EPA will not substitute its own judgment for that of Arkansas. Rather, consistent with the decision in *Alaska Dep't of Env't'l Conservation v. EPA*, 540 U.S. 461 (2004), in reviewing a petition to object to a title V permit raising concerns regarding a state's PSD permitting decision, EPA generally will look to see whether the Petitioner has shown that the state did not comply with its SIP-approved regulations governing PSD permitting or whether the state's exercise of discretion under such regulations was unreasonable or arbitrary.<sup>2</sup> *See, e.g., In re East Kentucky Power Cooperative, Inc.* (Hugh

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<sup>1</sup> The appeal of federal PSD permits issued pursuant to the federal regulations at 40 CFR § 52.21 is governed by the regulations at 40 CFR § 124.19, and authority to review such permits rests exclusively with the Environmental Appeals Board (EAB). Because of the exclusive authority of the EAB in this area, the Administrator has declined to review the merits of a federal PSD permit in the context of a petition to review a title V permit. *See, e.g., In re Kawaihae Cogeneration Project*, Petition No. 0001-01-C (Order on Petition) (March 10, 1997).

<sup>2</sup> In determining the appropriate standard of review to apply to the review of federal PSD permit determinations in a petition to object to a title V permit, the standard of review applied by the EAB in reviewing the appeals of federal PSD permits provides a useful analogy. The standard of review applied by the EAB in its review of federal PSD permits is discussed in numerous EAB orders as the "clearly erroneous" standard. *See, e.g., In re Prairie State Generation Company*, 13 E.A.D. \_\_\_\_, PSD Appeal No. 05-05, slip op., 2006 EPA App. LEXIS 38 (EAB, August 24, 2006); *In re Kawaihae Cogeneration*, 7

L. Spurlock Generating Station) Petition No. IV-2006-4 (Order on Petition) (August 30, 2007); *In re Pacific Coast Building Products, Inc.* (Order on Petition) (December 10, 1999); *In re Roosevelt Regional Landfill Regional Disposal Company* (Order on Petition) (May 4, 1999).

## II. BACKGROUND

### A. The Facility

The Turk plant will be located in Fulton, Hempstead County, Arkansas. The proposed power plant will generate 600 megawatts of electricity per hour utilizing a steam turbine with steam provided by an ultra-supercritical steam boiler. The steam boiler will utilize sub-bituminous coal as the predominant fuel, with natural gas utilized as startup fuel.

### B. The Permit

On August 9, 2006, AEP submitted a PSD pre-construction and title V operating air permit application to the ADEQ for the construction and operation of the Turk plant. Arkansas published notice of the draft PSD and title V permit on June 12 and 14, 2007, and held a hearing on the permit on July 12, 2007. The deadline for public comments was extended twice and written comments were accepted until the close of business on August 6, 2007. The Petitioners submitted comments during the public comment period on the draft construction and operating permit.

On February 8, 2008, the U.S. Court of Appeals for the D.C. Circuit vacated EPA's Section 112(n) Revisions Rule and its Clean Air Mercury Rule (CAMR). *See New Jersey v. EPA*, 517 F. 3d 574 (D.C. Cir. 2008). The Section 112(n) Revision Rule removed coal- and oil- fired electric utility steam generating units (EGUs) from the section 112(c) list of source categories subject to regulation under section 112(d). One effect of the Court's vacatur of that rule is that coal- and oil- fired EGUs, which were a listed source category under section 112 beginning December 20, 2000, remain on the section 112(c) list and therefore are subject to section 112(g), which requires that no person may begin actual construction or reconstruction of a major source of hazardous air pollutants unless the permitting authority determines on a case-by-case basis that new-source MACT requirements will be met. Arkansas has taken delegation of section 112(g) and is therefore required to establish the case-by-case MACT standards for the permit applicant. The federal requirements for a case-by-case MACT determination are contained in 40 CFR § 63.43.

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E.A.D. 107, 114 (EAB, April 28, 1997). In short, in such appeals, the EAB explained that the burden is on a petitioner to demonstrate that review is warranted. Ordinarily, a PSD permit will not be reviewed by the EAB unless the decision of the permitting authority was based on either a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review.

On April 9, 2008, AEP submitted a MACT application for the Turk plant, as required by CAA Section 112(g). EPA provided comments, and Arkansas released draft title V permit provisions for its MACT determination. On August 11, 2008, ADEQ published notice of those draft provisions and submitted the permit to EPA.<sup>3</sup> EPA considers the permit provisions as of August 11 to be the complete proposed permit. On November 5, 2008, ADEQ issued the permit to AEP pursuant to state regulatory provisions implementing the Act, 42 U.S.C. §§ 7401, et seq. ADEQ issued a detailed response to comments (RTC) with the final permit. In this document, ADEQ addressed the issues raised in public comments, in some cases at considerable length, and provided both legal and factual bases for its decisions.

### III. THRESHOLD REQUIREMENT – TIMELINESS OF PETITION

Section 505(b)(2) of the Act provides that a person may petition the Administrator of the EPA, within sixty days after expiration of EPA's 45-day review period, to object to the issuance of a proposed permit. ADEQ proposed the permit to EPA on August 11, 2008. EPA's 45-day review period for the AEP merged PSD/title V permit expired on September 25, 2008. Thus, the sixty-day petition period ended on November 24, 2008. The subject petition is dated November 24, 2008. EPA finds that the Petitioners timely filed their petition.

### IV. ISSUES RAISED BY THE PETITIONERS

#### A. The BACT Analysis

The CAA and corresponding PSD regulations require that new major stationary sources and major modifications of such sources employ BACT to minimize emissions of regulated pollutants emitted from the facility in significant amounts. *See* CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); and 40 CFR § 52.21(j)(2). BACT is defined in the Clean Air Act as “an emission limitation based on the maximum degree of reduction [of pollutants emitted from the 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.” *See* CAA § 169(3), 42 U.S.C. § 7479(3). The Arkansas State Implementation Plan incorporates the definition of BACT in section 52.21(b)(12) of EPA regulations. AR Reg. 19.904(A); AR Reg. 19.903(B).

EPA has developed a “top-down” process that permitting authorities may use to ensure that a BACT analysis satisfies the applicable legal criteria. The top-down

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<sup>3</sup> Petitioners submitted comments during the public comment period on the MACT determination. EPA did not submit comments on the MACT determination.

BACT analysis consists of a five-step process which provides that all available control technologies be ranked in descending order of control effectiveness, beginning with the most stringent. See *Prairie State*, slip op. at 17-18. The most stringent control technology is deemed the control necessary to achieve BACT-level emission limits unless the applicant demonstrates, and the permitting authority determines, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not achievable in that case. An incomplete BACT analysis, including failure to consider all potentially applicable control alternatives, constitutes clear error. See, e.g., *Prairie State*, slip op. at 19; *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 142 (EAB, February 4, 1999); *In re Masonite Corp.* 5 E.A.D. 551, 568-569 (EAB, November 1, 1994). The five steps in the top-down process are summarized below:

- a. Identify all available control technologies;
- b. Eliminate technically infeasible options;
- c. Rank remaining control technologies by control effectiveness;
- d. Evaluate the economic, environmental, and energy impacts of the options; and
- e. Select BACT.

*Prairie State*, slip op. at 17-18. Although EPA regulations do not require application of this top-down process to meet the BACT requirement, this top-down analysis is frequently used by permitting authorities to ensure that a defensible BACT determination, including consideration of all requisite statutory and regulatory criteria, is reached.

1. *ADEQ's Decision Not to Evaluate Integrated Gasification Combined Cycle (IGCC) Process in its BACT Analysis*

*Petitioners' Claims.* The Petitioners argue that "clean production processes must be considered as a pollution control option" and that the BACT analysis for this permit was inadequate because of ADEQ's "failure to consider integrated gasification combined cycle technology as part of the required BACT analysis." Petition at 7. According to the Petitioners, "IGCC is an available control technology (with top-of-the-line pollution control efficiencies) that should have been fully considered in the draft permit's BACT determination for each of the PSD-regulated pollutants." The Petitioners argue that federal law "requires that this technology be thoroughly evaluated as part of the ADEQ BACT analysis" and cites in support public comments submitted to ADEQ on this permit which provide "examples of state decisions implementing the federal PSD program that have required consideration of IGCC in the BACT review process for new-coal fired power plants." Petition at 7. These public comments identify four states and one association of eight northeastern states that are alleged to have determined that IGCC should be considered in a BACT analysis for a new coal-fired power plant. Comments of Sierra Club at 19. The Petitioners also support their argument with the contention that "The U.S. EPA has withdrawn the December 13, 2005, memo, which SWEPCO relied upon to suggest that IGCC should not be included in a BACT analysis for a PC boiler." The Petitioner does not identify additional "clean production processes" that ADEQ

allegedly failed to consider in its BACT analysis other than IGCC.

Furthermore, the Petitioners also appear to argue that IGCC should be considered in the BACT analysis because it is a more efficient power producing technology. The petition cites an EPA study that observed that IGCC technology is somewhat more efficient in generating electricity than pulverized coal technology. See, U.S. EPA, Environmental Footprints and Cost of Coal-Based Integrated Gasification Combined Cycle and Pulverized Coal Technologies (July 2006), at ES-1. The Petitioners argue that “increased efficiency is a method of pollution control” but do not identify any technology other than IGCC that they contend ADEQ should have considered based on greater efficiency.

ADEQ responded by relying on a conclusion by EPA Region 8 that the IGCC process need not be considered in the BACT analysis for another permit issued to Deseret Power because the IGCC process would “redefine” the waste-coal fired, circulating fluidized bed boiler that Deseret Power proposed to construct. RTC at 17. ADEQ noted that the AEP facility was distinct from the facility proposed by Deseret Power, but nevertheless concluded that a portion of EPA’s analysis from that permit could be applied to the AEP facility under review. ADEQ adopted the following reasoning reflected in the permit record prepared by EPA Region 8: “The combined cycle generation power of an IGCC process employs the same turbine and heat recovery technology that is used to generate electricity with natural gas at other electric generation facilities. Thus, this portion of the IGCC process is very similar to existing power generation designs that EPA has agreed would redefine the basic design of the source when an applicant proposed to construct a pulverized coal fired boiler. See, e.g., *SEI Birchwood Inc*, 5 E.A.D. 25 (1994); *Old Dominion Electric Cooperative Clover*, Virginia, 3 E.A.D. 779 (Adm’r 1992).” ADEQ RTC at 17. In addition, ADEQ observed that certain “fundamental differences in equipment design are sufficient to conclude that the IGCC process would redefine the proposed source.” *Id.* In particular, ADEQ said the following: “the core process of gasification at an IGCC facility is fundamentally different than a boiler. Coal gasification is more akin to technology employed in the refinery and chemical manufacturing industries than technologies generally in use in power generation (i.e., a controlled chemical reaction versus a true combustion process). Use of coal gasification technology would necessitate different types of expertise on the part of the applicant and employees to produce the desired product (electricity).” *Id.*

ADEQ also responded to public comments regarding an EPA settlement of litigation over a December 13, 2005, letter to a consultant that reflected EPA’s views as to whether IGCC should be considered in the BACT analysis for a coal-fired electric generating facility. The state’s response included the following quote from the Settlement Agreement signed by EPA: “EPA agrees and stipulates that the December 13, 2005 document is not final agency action and creates no rights, duties, obligations, nor any other legally binding effects on EPA, the states, tribes, any regulated entity or any person.” ADEQ then observed that EPA did not state in the settlement that it believed the position expressed in the letter to be erroneous and that EPA subsequently repeated the position expressed in the letter in response to public comments on the Deseret Power permit.

ADEQ did not consider or address the examples provided in public

comments of state permitting authorities that concluded IGCC should be considered in the BACT analysis.

Elsewhere in its response to comments, ADEQ explained that it was following EPA's interpretation that the Clean Air Act did not require a BACT analysis to include options that fundamentally "redefine" the proposed source. RTC at 14. In the discussion that followed, ADEQ adopted the legal reasoning provided by EPA Region 8 to support the conclusion that the IGCC technology need not be considered in the BACT analysis for the Desert Power permit. RTC at 14-16.

Finally, in another portion of its Response to Comments document, ADEQ discussed IGCC as part of its analysis of alternatives to the proposed source under section 165(a)(2) of the Clean Air Act. The state provided several reasons why it felt it was not appropriate to require the applicant to construct an IGCC facility. RTC at 9-11.

*EPA's Response.* Based on a recent evaluation of this issue by the EPA Environmental Appeals Board (EAB), EPA concludes that ADEQ failed to provide an adequate justification to support its conclusion that the IGCC technology should be eliminated from consideration on the grounds that it would "redefine" the proposed source. To meet the applicable legal criteria, a BACT analysis for each pollutant must consider "application of production processes or available methods, systems, and techniques ... for control of such pollutant." 40 C.F.R. § 52.21(b)(12). Thus, when a potential pollution control strategy is not considered in a BACT analysis, the record should provide a reasoned basis to show why that option is not "available" in a particular instance.

The justification provided by ADEQ for eliminating IGCC from consideration is substantially the same as the justification previously used by several EPA offices that the EPA EAB has since determined to be inadequate in a recent decision. *In re: Desert Rock Energy Company, LLC*, PSD Appeal Nos 08-03 et al. (Sept. 24, 2009). Although States with SIP-approved PSD programs have independent discretion and are not necessarily required to follow all EPA policies or interpretations, they are required to respond to all significant issues raised in public comments and conduct a BACT analysis that is reasoned and faithful to the statutory framework.

Based on the analysis provided by the EAB in the Desert Rock decision, EPA is unable to conclude that ADEQ's response to comments on the IGCC issue satisfies this requirement. When EPA is called on to assess whether a state action is supported by a reasoned basis, it is appropriate for EPA to consider prior decisions of the EAB and Administrator that reach conclusions regarding the adequacy of particular reasoning. Such decisions provide useful guidelines on how to conduct a reasoned BACT analysis. Since EPA sees no basis to distinguish its reasoning in the recent EAB decision from the matter before us in this instance, EPA cannot conclude that ADEQ has provided a complete and reasoned response to comments calling for IGCC to be included in the BACT analysis for this facility.



In its opinion on the appeal of the Desert Rock permit, the EAB concluded that EPA Region 9 had abused its discretion in concluding, on the record before Region 9, that the IGCC technology redefined the source in that case. *Desert Rock*, slip op. at 56-77. In its response to public comment, EPA Region 9 explained that it believed IGCC “would fundamentally change the nature of the proposed major source as it would change the basic design of the equipment that [the applicant] proposed to install.” Slip. op. at 68. Region 9 justified this conclusion on the same grounds that ADEQ uses here -- the similarity of the combined cycle power block to a natural-gas fired electric generating facility, the fundamental differences of the gasification process at an IGCC facility from a boiler, and the different types of expertise required to operate these technologies. Slip. op. at 68-69. However, after considering this fundamental portion of Region 9’s analysis, the EAB concluded that Region 9 erred because it failed to address two critical questions. First, the Board reasoned that Region 9 had failed to follow the analytical framework for evaluating the “redefining the source” issue that the EAB had outlined in a prior decision. *Id.* at 69. Second, the Board observed that Region 9 had failed to explain how IGCC could be considered a potentially available control technology for similar facilities in two other EPA-issued permits but not in the case of the Desert Rock permit.

Similar to the record in the Desert Rock case, with respect to the AEP permit at issue here, the public comments referenced in the Petition contained examples of other PSD permits where state permitting authorities had concluded that IGCC was a potentially available control technology that should be evaluated in the BACT analysis for coal-fired electric generating facilities. However, ADEQ failed to consider or address this portion of the public comments. Thus, like Region 9 in the Desert Rock matter, ADEQ has failed to explain how IGCC could be considered potentially available in other state PSD permit reviews of similar facilities but not potentially available for application to the AEP facility at issue in this case. Although it is possible ADEQ could have identified valid grounds to distinguish these state determinations from the permit at issue here, the record does not reflect any determination by ADEQ on this point. While ADEQ itself has not considered IGCC in the BACT analysis in any prior PSD permit, EPA does not consider this fact to be a material distinction here because it is still a fundamental tenet of the BACT requirement that, “[i]n determining the most stringent control option, the proposed source is required to look at other recently permitted sources.” *In re: Inter-Power of NY, Inc.*, 5 E.A.D. 130, 135 (EAB 1994); *see also Desert Rock*, slip. op. at 70. Thus, in light of the analysis in the Desert Rock decision, EPA cannot find ADEQ’s reasoning to be sufficient to support its conclusion here that IGCC would redefine the proposed source.

As to the other critical question that Region 9 failed to address in the Desert Rock permit, Arkansas is not necessarily required to follow the analytical framework used by EPA to assess whether an option may be excluded on “redefining the source” grounds. However, if Arkansas intends to employ a different approach to determine whether an option is not “available” because it would “redefine the source,” the State must articulate a statutory foundation for any alternative approach.<sup>4</sup> In this case, however, ADEQ has

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<sup>4</sup> Since the EAB has articulated such a foundation for its approach that has been upheld by one U.S. Court of Appeals, we strongly recommend that SIP-approved states follow the framework articulated by the EAB in the same manner that we recommend states

not expressed an intention to adopt an alternative approach to evaluating the “redefining the source” issue. ADEQ’s response to comment states clearly that it “follows EPA’s interpretation” with respect to the “redefining the source” issue. However, as was the case with EPA Region 9’s response to comment in the Desert Rock permit, the ADEQ has not in fact followed EPA’s interpretation on this issue because it has not applied the analytical framework outlined by the EAB in a prior decision, despite citing to that decision as part of its rationale. ADEQ has thus made the same error as EPA Region 9 by not taking a hard look at how AEP defined its project and to “discern which design elements were inherent to that purpose and which design elements could be changed to achieve pollutants emissions reductions without disrupting [the applicant’s] basic business purpose.” See Desert Rock, Slip op. at 69. Even though ADEQ is not necessarily required to follow EPA’s interpretation of the Clean Air Act on this issue, once it chooses to do so to justify its compliance with the Act, it must remain faithful to EPA’s approach to make that showing, or adopt an alternative approach and identify a statutory foundation for such approach.

EPA notes that the record here may already contain potentially relevant information regarding how the applicant has defined its project. AEP Supplemental Comments on the Draft Turk Air Permit to ADEQ (Nov. 15, 2007) at 12. However, the record does not demonstrate that ADEQ considered this information when determining that IGCC redefined the source. Although EPA and some permitting authorities have previously attempted to categorically conclude that some options may be excluded in all cases from a BACT analysis on “redefining the source” grounds, recent EAB decisions emphasize that EPA’s interpretation is that “an analysis of the record is an essential component of a supportable BACT decision that a proposed control technology redefines the source.” Desert Rock, Slip. Op. at 76. Even though Region 8’s permitting record in Deseret used much of the same reasoning as Region 9 in the Desert Rock permit, the Deseret response to comment went further to consider the applicant’s objective and purpose of utilizing waste coal, which was not considered compatible with IGCC technology. Deseret RTC at 15-16. Thus, EPA Region 8 concluded that the IGCC option would have the effect of regulating the applicant’s objective or purpose and in fact applied the analytical framework reflected in the EAB’s prior decisions. ADEQ did not consider this factor when determining that only a portion of Region 8’s analysis from that permit decision was also applicable to the AEP project.

EPA recognizes that ADEQ made a good faith effort to address this issue consistent with prior EPA determinations. However, in light of the EAB’s recent conclusions regarding the adequacy of the EPA reasoning that ADEQ followed, we cannot now agree that ADEQ’s responses were sufficient.

Before the EAB provided its analysis in the Desert Rock matter, the EPA Administrator also applied substantially the same reasoning as ADEQ and Region 9 to support a prior decision to deny a Petition to Object to a Title V petition on the basis of a

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employ the top-down BACT methodology to ensure they complete a BACT analysis that is faithful to the statutory guides.

failure to consider IGCC in the BACT analysis. See, e.g., *In re East Kentucky Power Cooperative, Inc. (Hugh L. Spurlock Generating Station) Petition No. IV-2006-4 (Order on Petition) (August 30, 2007)* at 39-40. EPA found that, under the circumstances presented in that matter, the Petitioner had not demonstrated that the state's PSD permits limits did not represent BACT because they were not based on IGCC. *Id.* EPA's decision in the present Order reflects the circumstances presented in this matter, including the particular record of the ADEQ permit, and the evolution of EAB's approach to the BACT analysis, as reflected in subsequent EAB decisions and other actions.

Because the current Administrator finds the reasoning of the EAB in the Desert Rock matter<sup>5</sup> persuasive on this issue, EPA is not following the reasoning on the IGCC issue reflected in the paragraph that carries over from pages 39-40 of the order on the East Kentucky permit. The reasoning discussed in this paragraph of the Order was additional analysis by EPA and was not the reasoning provided by the KDAQ to support its permit decision. Furthermore, like the permit record in the Desert Rock matter, the East Kentucky order does not apply the analytical framework outlined by the EAB in its earlier decision in the *Prairie State* matter. See, *In re: Prairie State Generating Company*, PSD Appeal No. 05-05, Slip. op. at 28-36 (EAB 2006). The analytical approach reflected in the EAB's *Prairie State* decision was the approach upheld by the U.S. Court of Appeals for the Seventh Circuit. *Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007). Furthermore, the EAB has now followed that framework in two opinions since *Prairie State*. In addition, the EAB observed in its *Desert Rock* opinion that the argument that technology requires different types of expertise to operate is "particularly weak in the PSD context." Slip. op. at 70 n. 1. The EAB explained that add-on pollution control technologies may also require different expertise than the applicant had planned for a proposed facility, and the Board observed that such a factor was best considered when assessing economic impacts and other costs. As the EAB noted in the *Prairie State* analysis, "cost savings generally is not a sufficient purpose or objective to justify treating a design element as basic or fundamental" for purpose of determine whether an option would redefine the source. Slip. op. at 30 n. 23. The EAB's analytical framework calls for considering whether a fact underlying an assertion that a design element is fundamental (such as cost savings) is better considered at later stages of the BACT review. *Prairie State*, Slip. Op. at 30 n. 23; *Desert Rock*, Slip Op. at 71-72. Since the East Kentucky Order relies on the EAB's analysis in *Prairie State* without considering this component of the Board's reasoning, the EAB decision in *Desert Rock* provides a more comprehensive analysis of this issue.

For these reasons, EPA concludes that ADEQ has not supplied a reasoned basis for eliminating IGCC from the BACT analysis on "redefining the source" grounds and

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<sup>5</sup> The EAB did not discuss the Administrator's determination in the East Kentucky Power matter in the opinion on review of the Desert Rock permit. The parties in the Desert Rock appeal do not appear to have cited the Administrator's order on the East Kentucky permit in briefs to the EAB or otherwise brought it to the EAB's attention.

grants the Petition with respect to this issue.

After considering other permitting decisions and the EAB's analytical framework (or adopting an independent analysis faithful to the statutory requirements), ADEQ may yet be able to substantiate here that IGCC technology would redefine the source proposed by the applicant in this instance. The EAB observed that legislative history of the statutory language on "innovative fuel combustion techniques" may place an outer limit on the "redefining the source" policy, *Desert Rock*, slip. op. at 77 n. 82, but the EPA has not established as a matter of federal law that IGCC technology must be considered in BACT analysis in all circumstances.

We note that the permitting record in this case includes additional information, provided by the permit applicant and discussed in ADEQ's alternatives analysis under section 165(a)(2) of the Act, that is relevant to the question of whether IGCC should in fact be selected as BACT for this facility. However, because ADEQ did not rely on this information to eliminate the IGCC option at later steps of its BACT analysis, we make no determination here as to whether IGCC can be eliminated as a BACT candidate for the facility even if it is not demonstrated to redefine the proposed source.

## *2. ADEQ's Decision Not to Use Output-Based BACT Limits*

*Petitioners' Claims.* The Petitioners also argue that "BACT must consider efficiency of a unit and total pollutant emissions, rather than merely focus on emissions per unit of energy input." Petition at 7. Although not entirely clear from the context of the paragraph in which it appears, this sentence appears intended to pick up an argument from the public comments that the BACT emissions limitations in the permit should be based on units of output rather than input.

ADEQ declined to include output-based limits in the permit and responded as follows to the public comment on this subject:

The ADEQ agrees that greater efficiency will result in lower emission rates and limits on an output basis. However, it would be inappropriate to compare emission limits based on output alone. Fuel type, boiler design, individual characteristics of a plant and even the energy demand of different types of air pollution control equipment can affect such an analysis. The commenter presented output based limits calculated from available information but did not provide any details as to the method of calculations, the details of these facilities, averaging times, or even which limits are purported to be lower than the draft SWEPCO permit. A cursory review of the information indicates limits possibly both above and below the SWEPCO proposed limits.

RTC at 18.

ADEQ went on to explain that the proposed ultra supercritical boiler would result in lower rates on an output basis than other pulverized coal boilers. ADEQ explained further that “Even though the Department may agree that greater efficiency will result in lower emissions on an output basis, there is no requirement for BACT limits to be explicitly expressed in output based units.” ADEQ observed that “[m]ost coal fired power plants have emission rates expressed in terms of Btu input” and that “output based limits would add complexity and uncertainty to monitoring and establishing permit limits.” RTC at 18-19.

*EPA's Response.* The Petitioners have failed to demonstrate that the form of the BACT limits in this permit do not comply with the Act. First, the Petition does not provide any support for this contention. Second, ADEQ is correct that there is no requirement for BACT limits to be explicitly expressed in output based units and ADEQ provided a reasoned basis to support its decision to continue using the traditional input-based format for BACT limitations for this type of facility. EPA agrees that it is worthwhile for permitting authorities to consider whether output-based limits offer advantages over input-based limits. However, in light of the failure to demonstrate that these BACT limits do not comply with the Act, the Petition is denied on this issue.

### *3. Petitioner's Claim that the Permit Fails to contain limits for Particulate Matter*

*Petitioners' Claims.* The Petitioners state that “the proposed Permit must contain Particulate matter (PM) limits including both ‘front-half’ (filterable) and ‘back-half’ (condensable) emissions.” Petition at 8.

*EPA's Response.* Particulate matter emitted from a coal-fired boiler typically includes both “filterable” and “condensable” PM. Filterable PM is directly emitted from a stack or other device, and it can be a solid or liquid. This type of PM can be “caught” on a filter and controlled by, for example, the pulse jet fabric filter included in the permit for AEP. Condensable PM is formed within the boiler exhaust gas flow as the result of reactions, cooling, and dilution. This PM can be liquid or solid, but tends to have a diameter of less than 10 micrometers.

The Permit includes multiple particulate matter limits for the main boiler. The first limit is specific to PM<sub>10</sub> (filterable and condensable), and sets a limit whereby the unit may not exceed 150 lbs/hour (657 tpy). Permit at 30-31. In addition, the permit imposes limits of 0.012 lb/MMBtu for filterable PM and 0.025 lb/MMBtu for total PM<sub>10</sub>, each measured over a 3-hour averaging period. Permit at 32. The permit also requires the use of EPA reference test methods 5 or 7 for filterable PM and PM<sub>10</sub> and test methods 5 and 202, or 7 and 202, for both total PM and total PM<sub>10</sub>. Permit at 33. Method 202 applies to the determination of condensable particulate matter (CPM) emissions from stationary sources. It is intended to represent condensable matter as material that condenses after passing through a filter and as measured by this method. Thus, the permit does contain limits for PM, including both

filterable and condensable emissions.

For the reasons described above, the Petitioners have not demonstrated that the permit fails to comply with a requirement under the Act. As a result, the petition is denied as to the issue raised regarding the particulate matter (PM) limits.

#### *4. Petitioner's Claim that the BACT Analysis Failed to consider Catalytic Oxidation*

*Petitioners' Claims.* The Petitioners state that "The BACT analysis in the proposed Permit also failed to consider catalytic oxidation, and if it had, it would have concluded that catalytic oxidation is technically feasible. See Final Technical Report, *Catalytic Oxidation of NO<sub>x</sub> in Flue Gas for Capture in Wet Scrubbers*, ICCI Project Number: 98-1/1.1E-1, Gary A. Robbins, CONSOL Inc., Research & Development, ... ." Petition at 8.

*EPA's Response.* In the final permit, ADEQ provided its explanation for why catalytic oxidation for CO and VOC control is not technically feasible for use with coal-fired boilers. See Final Permit at 13 (BACT Evaluation for Main Boiler). With respect to catalytic oxidation of NO<sub>x</sub>, ADEQ further explained in its Response to Comments that the "plant will be equipped with a catalytic reduction system to reduce emissions below the stated limits of the referenced NO catalyst. There is no reason to consider the inferior technology in the BACT analysis." ADEQ RTC at 20.

Thus, ADEQ did consider catalytic oxidation for CO and VOC, and has provided a reasoned explanation for not considering catalytic oxidation for NO<sub>x</sub> (i.e., that it would perform worse than catalytic reduction). In light of these explanations offered in the final permit and the RTC, the Petitioners have not demonstrated that the permit fails to comply with a requirement under the Act. As a result, the petition is denied as to the issue raised regarding the consideration of catalytic oxidation technology.

#### *5. Petitioner's Claim that the permit is deficient because SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> do not reflect BACT*

*Petitioners' Claims.* The Petitioners state that "The proposed permit is also deficient because the sulfur dioxide (SO<sub>2</sub>) and sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>) limits do not reflect best available control technology, and are higher than recently permitted similar sources, including Western Farmer's Electric Cooperative's Hugo Unit No. 2, in southeastern Oklahoma."

*EPA's Response.* In the final permit, the BACT limits for SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> were lowered from the limits initially proposed in the draft permit of 0.10 lb/MMBtu SO<sub>2</sub> and 0.006 lbs/MMBtu H<sub>2</sub>SO<sub>4</sub>. The limit for SO<sub>2</sub> was lowered to 0.08 lb/MMBtu SO<sub>2</sub> 30-day average emission limit with a 480 lbs/hr 24 hour limit. In addition, when combusting coal with a sulfur content less than or equal to 0.045%, there is an additional SO<sub>2</sub> emission limit of 0.065 lbs/MMBtu on a 30

day rolling average. The proposed SWEPCO BACT limit for H<sub>2</sub>SO<sub>4</sub> emission was lowered to 0.0042 lbs/MMBtu.

Furthermore, in its response to comments, ADEQ provided the reasons why it concluded that the revised permit limits were consistent with the requirements of BACT. ADEQ explained that the more stringent limits in the Western Farmer's Electric permit were based on air quality considerations and were not demonstrated to be economically achievable under the BACT analysis. In addition, ADEQ noted that the Western Farmer's permit has since been voided and the facility was not constructed. Furthermore, ADEQ's response included discussion of permit limits at a number of other permitted facilities and the reasons ADEQ did not consider wet flue gas desulfurization as BACT. See RTC at 23-31. The Petition fails to address any of ADEQ's response. It is not entirely clear whether the Petitioners seek an objection to the revised SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> limits, and if so, on what basis. Accordingly, the Petitioners have failed to demonstrate that the permit is deficient regarding the BACT analyses conducted for SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> and their resultant emission rates. Therefore, the Petition is denied as to these issues.

#### B. Proposed Emission Limits Are Not MACT

*Petitioners' Claims.* The Petitioners note, as discussed above, that Section 112(g) of the Clean Air Act requires ADEQ to set a case-by-case MACT standard to control hazardous air pollutants from the Turk plant. The Petitioners state that "The Permit application fails to comply with the requirements for conducting a thorough case-by-case MACT analysis for Hazardous Air Pollutant emissions from the Turk Plant." Petition at 9. The Petition states that the MACT analysis includes both the identification of a "MACT floor" standard and the assessment of a "beyond the floor" standard. The Petitioners argue that both steps in the analysis were inadequate, although the only identified flaw specifically alleged is that "lower limits (i.e., MACT floor) have been achieved at other plants." Petition at 10; see also *id.* at 11.

*EPA's Response.* EPA notes that although the Petition discusses the legal requirements of Section 112(g), it provides very little specific explanation of why the proposed permit fails to meet the requirements of section 112(g). There is one reference to lower limits being achieved at other plants, but the petition does not even identify which pollutant is being discussed, much less why ADEQ's responses were inadequate to explain its rationale for setting the 112(g) limits.

ADEQ provided extensive responses on these issues in support of its 112(g) determinations. For example, in discussing mercury limits, ADEQ explained its view that "To be considered the 'maximum achievable', the limit must be achieved in practice. Achieved in practice is not the absolute lowest emission rate ever achieved by a source. It is the emission rate that a source can achieve on a continuous basis." RTC at 90. Similarly, in discussing VOC limits, ADEQ explained that it had used an approach from an engineering handbook published by the National Institute of Standards and Technology to develop "an upper range of process control" from a series of individual

data points. RTC at 91. In discussing the HCl limits, ADEQ explained why it was reluctant to set a standard based on individual stack tests: “In order to set a rate solely based on test, it is necessary to evaluate what if any variation exists in the data. Ideally, multiple tests over a longer period with monitoring of operational conditions would establish this variability.” RTC at 92.

The Petition provides no specific criticism of ADEQ’s beyond the floor analysis. The applicant submitted a beyond the floor analysis, as required by 40 CFR 63.43, and the record indicates that ADEQ considered the analysis in determining the MACT limits. *See* RTC at 83 (“section ‘d.’ [of each pollutant specific section of the application] is the beyond the floor analysis.”). In fact, ADEQ determined that the permit included “beyond the floor” limits for HCl, HF and lead.

The Petition also provides no explanation of why ADEQ’s explanations that lower stack tests do not necessarily establish a lower MACT floor are inconsistent with the Clean Air Act. In the absence of any demonstration in the Petition why ADEQ’s approach to determining MACT limits under section 112(g) is inadequate under the CAA, the Petition is denied as to this issue.

#### C. Proposed Permit Fails To Assure Compliance with Emission Limits

*Petitioners' Claims.* The Petitioners state that “For Lead, PM<sub>10</sub>, HCl, HF, VOC, and CO, the Draft Permit requires only an annual stack test (only an initial test for the auxiliary boiler). This is insufficient to verify that MACT limits are being met. A once yearly test is insufficient to assure compliance, and continuous emissions monitoring systems (CEMS) are widely available and in use today.” Petition at 11

*EPA's Response.* EPA’s part 70 monitoring rules (40 C.F.R. §§ 70.6(a)(3)(i)(A) and (B) and 70.6(c)(1)) are designed to satisfy the statutory requirement that “[e]ach permit issued under [title V] shall set forth . . . monitoring . . . requirements to assure compliance with the permit terms and conditions.” CAA § 504(c). As a general matter, permitting authorities must take three steps to satisfy the monitoring requirements in EPA’s part 70 regulations. First, under 40 C.F.R. § 70.6(a)(3)(i)(A), permitting authorities must ensure that monitoring requirements contained in applicable requirements are properly incorporated into the title V permit. Second, if the applicable requirement contains no periodic monitoring, permitting authorities must add “periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance with the permit.” 40 C.F.R. § 70.6(a)(3)(i)(B). Third, if there is some periodic monitoring in the applicable requirement, but that monitoring is not sufficient to assure compliance with permit terms and conditions, permitting authorities must supplement monitoring to assure such compliance. 40 C.F.R. § 70.6(c)(1). EPA notes that periodic monitoring that meets the requirements of 40 C.F.R. § 70.6(a)(3)(i)(B) will be sufficient to satisfy the requirements of 40 C.F.R. § 70.6(c)(1) (i.e., will be sufficient to assure compliance with permit terms and conditions). In addition, in many cases, monitoring from applicable requirements will be sufficient to assure compliance with permit terms and conditions. In appropriate circumstances, recordkeeping can serve as monitoring.



The Permit requires continuous emissions monitoring for CO for the main boiler. See Specific Condition (SC) 1, Permit at 30; SC12, Permit at 40-41. The permit also requires continuous emissions monitoring for CO for the auxiliary boiler. Permit at 19.

Regarding the remaining pollutants specified in this claim above by the Petitioners, CEMs are not required by any EPA or State regulation applicable to the source. In this case, in addition to the annual stack testing requirement in the permit, a 24 hour rolling average of the heat input to the main boiler (SN-1) is required. Compliance is verified through hourly (1 hour) and 24 hour recordkeeping, and report submission every 6 months. See SC 18 which reads “The permittee shall not exceed a 24 hour rolling average heat input to SN-01 of 6000 MMBtu. [Regulation 19, ' 19.901 et seq. and A.C.A. ' 8-4-203 as referenced by A.C.A. ' 8-4-304, and 40 CFR 70.6]” Permit at 42. Also, see SC 19 which reads “The permittee shall maintain hourly and 24 hour records of the heat input to SN-01. These records shall be updated by the 15th day of the month after the month which the records represent, be kept on site, and be made available to Department personnel upon request. Reports of these records shall be submitted in accordance with General Provision.” [Regulation 19, ' 19.705 and 40 CFR 70.6] Final Permit at 42. Additional compliance measures for these emissions include a 10% opacity limit and the requirement to install and continuously operate a bag leak detection system equipped with an alarm system that will sound an audible alarm when an increase in relative particulate loadings is detected over a preset level. Permit at 41. Additionally for HCl and HF, these emissions are acid gases that are controlled, in part, with SO2 emissions control. As CEMS are required for SO2 emissions, indirect compliance of HCL and HF emissions and proper functioning of the control equipment is assured. Permit at 32. In addition, the required continuous opacity monitoring system (COMS) is an indicator of good operation and maintenance of the control equipment. Permit at 32. Additional compliance measures for the auxiliary boiler include a 10% opacity limit, use of natural gas only as fuel, monthly fuel usage records, a 500 hour operational limit, and daily records of hours of operation. The auxiliary boiler is also subject to the provisions of 40 CFR Subpart Db--Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. See Specific Conditions (SC) 26-35, Permit at 44-51.

The Petition fails to demonstrate that additional monitoring, including CEMS, is necessary to assure compliance with the emissions limits of the Permit. Accordingly, the Petition is denied on this issue.

1. The Petitioner's Claim that the proposed Permit is based on inadequate modeling data

*Petitioners' Claims.* The Petitioners state that “Petitioners found the permit to be based on inadequate modeling data, which undermines the enforceability of Permit terms. Preferably, SWEPCO should have collected at least one year of pre-construction meteorological data consistent with USEPA Meteorological Monitoring Guidance for Regulatory Modeling Applications.” Petition at 12. To support this contention, they argue that the AEP facility’s emissions “are released

in a complex arrangement of point, area, and volume sources.” Further, the Petitioners claim that the meteorological data used are “antiquated, low-quality, and non site-specific.” Petition at 12.

The modeling supporting ADEQ’s permitting decision used five years of meteorological data from a site at the Shreveport Airport. In its response to public comments, ADEQ quoted the following passage from page 6-30 of the EPA guidance identified above:

Although data meeting this guidance are preferred, airport data continue to be acceptable for use in modeling. In fact observations of cloud cover and ceiling, data which traditionally have been provided by manual observation, are only available routinely in airport data; both of these variables are needed to calculate stability class using Turner’s method (Section 6.4.1). The Guideline on Air Quality Models recommends that modeling applications employing airport data be based on consecutive years of data from the most recent, readily available 5-year period.

ADEQ RTC at 42-43. ADEQ then explained that “5 years of data was used in the Class II modeling” and that “[p]redicted impacts do not warrant additional site specific meteorological data.” ADEQ further explained that “ADEQ has evaluated and agreed to the use of Shreveport data” and noted that “ADEQ typically uses Shreveport data for the area in which the plant will be located.” *Id.* at 44.

*EPA’s Response:* ADEQ indicated they had evaluated and agreed to the use of the Shreveport meteorological data, thus ADEQ concluded the data was ‘representative.’ The Petitioners did not provide any additional information to support their assertion that the data was not representative. The Petitioners have not demonstrated that ADEQ’s acceptance of modeling based on the Shreveport data was inconsistent with applicable regulations and EPA guidance.

To establish PSD permitting requirements under its State Implementation Plan, Arkansas has incorporated most of the provisions from EPA’s federal PSD permitting regulations at 40 C.F.R. § 52.21. AR Reg. 19.904(A); AR Reg. 19.903(B). This includes section 52.21(l), which provides that “[a]ll estimates of ambient concentrations shall be based on applicable air quality models, data bases, and other requirements specific in Appendix W of Part 51 of this chapter (Guideline on Air Quality Models.” Appendix W provides that “five years of representative meteorological data should be used when estimating concentrations with an air quality model” and that “use of 5 years of [National Weather Service] meteorological data or at least 1 year of site specific data is required.” 40 C.F.R. Part 51, Appendix W, Section 8.3.1.2.a-b. EPA generally recommends collecting site-specific data when representative data is not already available from the National Weather Service. EPA, Office of Air Quality Planning and Standards, Ambient Monitoring Guidelines for Prevention of Significant Deterioration, EPA-450/4-87-0007 (May 1987), at 14-15.

The record reflects that the modeling utilized by ADEQ is based on 5 years of National Weather Service meteorological data, and that ADEQ has made a determination that such data is representative of the relevant area. Further, ADEQ has noted in its response to comments that the EPA guidance cited in the Petition makes clear that airport data may be used for this purpose. The Petitioners do not demonstrate that the data used by ADEQ is not representative of the relevant area or show that the applicable regulations or guidance require one year of site-specific meteorological data under the circumstances present here.

The Petitioners have failed to demonstrate that the permit does not comply with a requirement under the Act, and, thus, the Petition is denied as to the issue discussed above.

D. Petitioner's Claims that PSD Permit is Required to Include a Limitation on Carbon Dioxide (CO<sub>2</sub>) Emissions and that the Record Lacks an Adequate Justification for Failing to Do So.

*Petitioners' Claims.* The Petitioners request that EPA object to the permit because it does not include limitations on the emissions of carbon dioxide (CO<sub>2</sub>). The Petitioners allege that the Prevention of Significant Deterioration (PSD) permit for the facility must include a Best Available Control Technology (BACT) analysis and emissions limitations for carbon dioxide. The Petitioners argue that the BACT requirement applies to these substances because these pollutants are "subject to regulation" under the CAA in the following manner: (1) Specified sources are required to monitor and report emissions of carbon dioxide under section 821 of the Clean Air Act Amendments of 1990 and EPA regulations at 40 C.F.R Part 75 implementing this provision; (2) emissions limitations for CO<sub>2</sub> are established in State of Delaware's EPA-approved State Implementation Plan; (3) carbon dioxide is a component of municipal solid waste landfill emissions that are regulated under New Source Performance Standard in 40 CFR Part 60, subpart Cc and WWW; (4) EPA possesses as yet unexercised authority to regulate carbon dioxide. Petition at 13-27. In addition, the Petitioner contends that ADEQ lacks an adequate record for its decision not to regulate carbon dioxide in the permit because ADEQ relies on rationale that was rejected by the EPA Environmental Appeals Board.

In its response to comment on this issue, ADEQ stated the following:

ADEQ disagrees that it must consider global warming impacts from the Turk plant. ADEQ does not currently regulate all greenhouse gases. Neither the Clean Air Act (CAA) and corresponding Environmental Protection Agency (EPA) regulations, nor Arkansas Pollution Control and Ecology Commission regulations impose duties upon ADEQ to consider or control carbon dioxide emissions.

RTC at 5. In support of this conclusion, ADEQ observed that the Supreme Court

decision in *Massachusetts v. EPA*, 127 S.Ct. 1438 (2007) “dealt only with whether EPA had the legal capacity to regulate CO<sub>2</sub> emissions from new motor vehicles under Title II of the Act, and, if so, whether EPA had offered sufficient reasons for refusing to do so.” RTC at 6. ADEQ went on to explain the following:

The Supreme Court’s decision did not automatically turn greenhouse gases into regulated pollutants. By remanding the matter to EPA, the Court implicitly recognized that CO<sub>2</sub> was not currently regulated and that before EPA could regulate CO<sub>2</sub>, EPA had to take additional action.

RTC at 6.

With respect to arguments that EPA had in fact already taken the action necessary to make carbon dioxide a regulated NSR pollutant, ADEQ relied on recent statements by EPA Region 8 in response to similar public comments on a PSD permit issued by Region 8 to Deseret Bonanza. RTC at 6. ADEQ argued that “EPA has historically interpreted the term ‘subject to regulation under the Act’ to describe pollutants that are presently subject to a statutory or regulatory provision that requires actual control of emission of these pollutants.” RTC at 11-12. To support this statement, ADEQ cited several decisions of the EPA Environmental Appeals Board. In response to the argument that carbon dioxide is “subject to regulation” because of existing monitoring and reporting requirements under the Clean Air Act Amendments of 1990 and EPA’s implementing regulation, ADEQ relied on the fact that such regulations do not place an emissions limitation or controls on carbon dioxide and stated that “EPA’s interpretation is that the PSD program only covers those air pollutants actually regulated through some form of emission limit or control requirement.” RTC at 12. In support of the latter proposition, ADEQ cited an EPA interpretive statement in a 1978 rulemaking and several additional EPA documents.

As to the argument that carbon dioxide restrictions are currently required because EPA has the legal authority to regulate carbon dioxide in the future, ADEQ argued that a “present emission limitation rule on CO<sub>2</sub>” is required to make a pollutant “subject to regulation,” and used EPA statements made in the course of rulemakings in 1978 and 1996 to support this view. RTC at 13. ADEQ did not address the arguments concerning the municipal solid waste landfill regulations because these arguments were not raised in public comments on the permit.

*EPA’s Response.* The Petitioners have not demonstrated that ADEQ is required to regulate CO<sub>2</sub> in the permit or that ADEQ’s record is insufficient to justify the State’s conclusion that CO<sub>2</sub> is not currently subject to regulation under the regulations in the Arkansas state implementation plan. ADEQ’s conclusion that it is not required to regulate CO<sub>2</sub> in a PSD permit was not unreasonable at the time the permit was issued and is consistent with EPA’s current interpretation of EPA

regulations and the Clean Air Act.

When ADEQ issued the permit on November 5, 2008, at least one EPA Region and the EPA program office that oversees implementation of the federal PSD permitting program had taken the position that CO<sub>2</sub> emissions were not subject to federal PSD requirements because they understood that EPA had historically interpreted the phrase "subject to regulation" in the federal PSD regulations to apply only to those pollutants already subject to actual control of emissions under other provisions of the CAA. See Response of EPA Office of Air and Radiation and Region VIII To Briefs of Petitioner and Supporting Amici, *In re: Deseret Power Electric Cooperative*, PSD Appeal No. 07-03 (filed March 21, 2008); Region 8's Response to Petition for Review, *In re: Deseret Power Electric Cooperative*, PSD Appeal No. 07-03 (filed November 2, 2007); Brief of the EPA Office of Air and Radiation, *In re: Christian County Generation, LLC*, PSD Appeal No. 07-01 (filed September 24, 2007). Accordingly, these EPA offices argued that the CAA Acid Rain program regulations (40 CFR Part 75) that require monitoring of CO<sub>2</sub> at some sources did not make CO<sub>2</sub> subject to PSD regulation. *Id.* These offices also explained in briefs to the EAB that they did not agree with the Petitioners' argument that the PSD BACT requirement should apply to pollutants for which EPA has the authority to establish limitations on emissions but has not yet done so.

Just 8 days after ADEQ issued the permit, a decision of EPA's Environmental Appeals Board ("EAB") addressed the position that CO<sub>2</sub> emissions were not subject to PSD regulation. See *In re: Deseret Power Electric Cooperative*, 14 E.A.D. \_\_\_, PSD Appeal No. 07-03 (EAB, November 13, 2008). The EAB determined that prior EPA actions were insufficient to establish a historic, binding interpretation that "subject to regulation" for PSD purposes included only those pollutants subject to regulations that require actual control of emissions. However, the EAB did not conclude that such an interpretation was impermissible under the CAA and found "no evidence of a Congressional intent to compel EPA to apply BACT to pollutants that are subject only to monitoring and reporting requirements." *Id.* at 63.

In order to address the ambiguity that existed in the federal PSD regulations following the EAB decision in *Deseret*, then-Administrator Stephen Johnson issued a memorandum setting forth the official EPA interpretation regarding which pollutants were "subject to regulation" for the purposes of the federal PSD permitting program. Memorandum from Stephen Johnson, EPA Administrator, to EPA Regional Administrators entitled, "EPA's Interpretation of Regulations that Determine Pollutants Covered by Federal Prevention of Significant Deterioration (PSD) Permit Program" (December 18, 2008) (Johnson Memo); see also 73 Fed. Reg. 80,300 (December 31, 2008) (public notice of December 18, 2008 memo). The Johnson Memo established that EPA interprets the phrase "subject to regulation" within the federal PSD regulations "to exclude pollutants for which EPA regulations only require monitoring or reporting but to include each pollutant subject to either a provision in the Clean Air Act or regulation adopted by EPA under the Clean Air Act

that requires actual control of emissions of that pollutant." Johnson Memo at 1; 73 Fed. Reg. at 80,301. To support this interpretation, the memorandum explains that the term "regulation" is susceptible to more than one meaning and that the primary meaning in several dictionaries emphasizes directing or controlling through a rule, restriction, or law. Johnson Memo at 7-8.

EPA received a petition for reconsideration of the position taken in the Johnson Memo, and on February 17, 2009, the current Administrator granted that petition. Letter from Lisa P. Jackson, EPA Administrator, to David Bookbinder, Chief Climate Counsel at Sierra Club (February 17, 2009). In granting reconsideration, Administrator Jackson announced the intent to conduct a rulemaking to take public comment on the issues raised in the memo, but she did not stay the effectiveness of the Johnson memo pending reconsideration. EPA initiated the public comment process in a notice published in the Federal Register on October 7, 2009. 74 Fed. Reg. 51535. This notice summarizes the reasoning of Administrator Johnson's memo and several alternative interpretations that are advocated by citizens in the Petition for Reconsideration of the Johnson Memo and public comments on other EPA actions. While this reconsideration process is ongoing, EPA continues to adhere to the interpretation reflected in Administrator Johnson's memorandum of December 18, 2008. 74 Fed. Reg. at 51539.

ADEQ administers an EPA-approved PSD program that is part of its State Implementation Plan. To establish PSD permitting requirements under the plan, Arkansas has incorporated most of the provisions from EPA's federal PSD permitting regulations at 40 C.F.R. § 52.21 "as in effect on November 29, 2005." AR Reg. 19.904(A); AR Reg. 19.903(B). Thus, under its SIP approved regulations, Arkansas is required to apply the definition of "regulated NSR pollutant" contained in section 52.21(b)(50) in 2005.

For the reasons discussed in the EAB's opinion in the Deseret matter and Administrator Johnson's memorandum, EPA does not agree with Petitioners' contention that ADEQ was required to address CO<sub>2</sub> in the permit.<sup>6</sup> Neither the Clean Air Act nor Arkansas SIP-approved regulations compel ADEQ to regulate CO<sub>2</sub> in the permit.<sup>7</sup> As explained in the Johnson Memo, states such as Arkansas

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<sup>6</sup> Actions are underway at EPA that could, when finalized, result in the promulgation of final standards controlling the emission of greenhouse gases. In particular, EPA has proposed a rule regulating greenhouse gas emissions from light-duty vehicles; that rule would control the emission of greenhouse gases within the meaning of the Johnson Memo.

<sup>7</sup> The Petitioners arguments that carbon dioxide is regulated in the Delaware SIP and under the NSPS for municipal solid waste landfills were not raised in public comments on the permit. Thus, EPA need not address that argument in response to this petition.

whose State Implementation Plans parallel EPA regulations may adopt an interpretation of state rules that is consistent with the interpretation in the Johnson Memo. *Id.* at 3 n. 1 ("To the extent approved State Implementation Plans contain the same language as used in 52.21(b)(50) or 40 C.F.R. § 51.166(b)(49), States may interpret that language in state regulations in the same manner reflected in this memorandum.")

Furthermore, Petitioners have not demonstrated that ADEQ's justification for not establishing limitations on CO<sub>2</sub> in this permit was unreasonable. On page 12 of its response to comments, ADEQ states that it "disagrees that CO<sub>2</sub> is a pollutant 'subject to regulation' because of the monitoring and reporting requirements found in the Acid Rain Provisions of the Act." To justify this conclusion, ADEQ observed that the acid rain provisions do not require any control of CO<sub>2</sub> emissions and that EPA's interpretation is that the PSD program only covers those air pollutants actually regulated through some form of emission limit or control. Furthermore, ADEQ explains on page 13 of its response that it has adopted the regulatory definitions in the federal PSD program regulations. In light of the ongoing proceedings before the EAB described above, ADEQ's summary of EPA's position that the PSD program only covers pollutants actually regulated through some form of emission limit or control was not clearly unreasonable at the time. Although the EAB later determined that EPA had not previously established that interpretation, it was not erroneous for ADEQ to perceive that this was EPA's position after two EPA offices that implement and interpret the requirements of the federal PSD program had taken the position. Moreover, at that time, no federal permitting authorities had actually imposed PSD requirements for CO<sub>2</sub>. In fact, no federal PSD permit has since issued with CO<sub>2</sub> limits included. Although EPA has since determined (through a decision of the EAB) that it had not previously adopted the interpretation of EPA regulations that ADEQ described, the position reflected in ADEQ's response to comment that the PSD program covers pollutants actually regulated through some form of control requirement is not precluded by the Clean Air Act and is consistent with EPA's present interpretation of the federal regulations. Neither the EAB's analysis in *Deseret* nor Administrator Johnson's memorandum was available at the time of ADEQ's final permit decision. Petitioners are correct that the EAB has since determined that the documents cited by ADEQ as evidence of an existing EPA interpretation were not sufficient to establish that such an interpretation was in fact adopted by EPA prior to ADEQ's permitting decision. Nevertheless, because of the memorandum from Administrator Johnson issued after the EAB decision, ADEQ's statement regarding EPA's position is correct at the present time. Thus, although ADEQ's reliance on several EPA documents discussed in the EAB's decisions in *Deseret* (including prior EAB decisions and statements in the Federal Register in 1978 and 1996) has ultimately proven misplaced, ADEQ's response to comments document contains sufficient reasoning to support ADEQ's decision not to include emissions limitations for CO<sub>2</sub> in the permit. ADEQ has explained that its SIP contains the same operative language reflected in EPA regulations, that EPA interprets this language to apply only to pollutants subject to regulations requiring a limitation or

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control on emissions of the pollutant, and that the acid rain program provisions do not require control of CO<sub>2</sub> emissions.

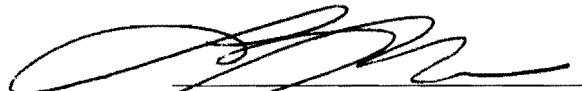
Thus, since ADEQ provided a justification for its action that was not clearly unreasonable, and because ADEQ has applied an interpretation of its regulations that is permissible under the Clean Air Act and consistent with the interpretation of the same language that EPA itself is following at this time, EPA is denying the petition with respect to the argument that the permit must contain emission limitations for CO<sub>2</sub>.<sup>8</sup>

## V. CONCLUSION

For the reasons set forth above, and pursuant to Section 505(b) of the Act and 40 C.F.R. § 70.8(d), I hereby grant in part and deny in part the petition from the Environmental Integrity Project, Sierra Club and Audubon requesting an objection to the title V permit issued to the American Electric Power Service Corporation for the John W. Turk Power Plant

Dated:

12 / 15 / 09



Lisa P. Jackson  
Administrator

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<sup>8</sup> Petitioners also argue in summary fashion that carbon dioxide emissions must also be considered “in the BACT collateral impacts analysis” and “in the alternatives analysis under CAA Section 165.” Petition at 13. However, the Petition contains no legal arguments or factual support for these claims, and EPA is denying the Petition with respect to these two issues.