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July 29, 2005

By Hand

Ms. Eureka Durr
Clerk of the Board
Environmental Appeals Board
U.S. Environmental Protection Agency
1341 G Street, N.W., Suite 600
Washington, D.C. 20005

Re: Prairie State Generating Station
Permit Number 189808AAB
PSD Permit Appeal No. PSD 05-05

Dear Ms. Durr:

Enclosed for filing is one original and three copies of Intervenor Prairie State Generating Company, LLC's Response to Petition (and exhibits) in the above captioned matter. We worked with Illinois Environmental Protection Agency ("IEPA") to develop a joint set of exhibits, but due to their volume, it was infeasible to do so. Therefore, Prairie State and IEPA are submitting separate sets of exhibits.

Thank you for your assistance in this matter. If you have any questions, please feel free to call me.

Sincerely,

Kevin J. Finto

KJF:lo
Enclosure

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BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

IN THE MATTER OF:)
PRAIRIE STATE)
GENERATING STATION)
APPLICATION NUMBER: 01100065)
PSD PERMIT NUMBER: 189808AAB)

APPEAL NUMBER: PSD 05-05

INTERVENOR PRAIRIE STATE GENERATING COMPANY, LLC'S
BRIEF IN RESPONSE TO PETITION

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TABLE OF CONTENTS

TABLE OF CONTENTS	i
TABLE OF AUTHORITIES	vii
PRELIMINARY STATEMENT	1
PETITIONERS HAVE NOT SATISFIED THE STANDARD OF REVIEW	4
DESCRIPTION OF THE PROJECT	8
RESPONSE TO PETITIONERS’ SPECIFIC ISSUES	10
I. IEPA Properly Addressed Endangered Species Under State Law.	10
II. IEPA Correctly Rejected the Assertion that it Had “Broad Legal Authority” Under the CAA to Consider the Need for, and Alternatives to, Prairie State.....	15
III. IEPA Did Not Violate Any NEPA Coordination Requirement.....	20
A. IEPA’s Responses to Petitioners’ NEPA Coordination Comments Were Plainly Sufficient.....	20
B. There Was <i>No</i> NEPA Analysis With Which EPA Or IEPA Could Coordinate to <i>Any</i> Extent.....	21
1. Petitioners have not identified any federal action for which a NEPA review with respect to Prairie State might be necessary.	23
2. Coordination with speculative federal actions is not required.....	24
C. Coordination Was Not Mandatory In This Case.	26
IV. IEPA Properly Rejected IGCC as BACT.	27
A. IEPA Had a Rational Basis for Rejecting IGCC.	28
1. The Permit Application evaluated IGCC.....	28
2. Follow-up submittals explained the current limitations of IGCC.....	29
3. IEPA requested additional information as part of the analysis.....	30
4. The SFA Pacific Report provided detailed information about IGCCs.	30
5. The Record contains additional supporting information.	34
6. IEPA documented its findings after careful analysis.....	35
B. Petitioners’ Arguments Do Not Refute IEPA’s Reasoned Decision.	37
V. IEPA Did Not Err in Rejecting the Use of Low-Sulfur Coal.	43
A. The Use of Local Coal is Integral to Prairie State.....	43
B. BACT Does Not Redefine the Project.....	46
C. Petitioners Fail to Demonstrate IEPA Was Clearly Erroneous.	48

	D. IEPA Analyzed And Rejected Low Sulfur Coal as BACT.	52
VI.	IEPA and PSGC Demonstrated Emissions From Prairie State Will Not Cause or Contribute to a Violation of the 8-Hour Ozone and PM _{2.5} NAAQS.....	55
	A. Prairie State Will Not Cause or Contribute to an Exceedance of the 8-hour Ozone NAAQS.	55
	B. Prairie State Will Not Cause or Contribute to an Exceedance of the PM _{2.5} NAAQS.	58
	C. NAAQS Are Not Self-implementing.....	60
VII.	IEPA Performed a complete “Environmental Justice” Assessment.	63
	A. The Board Has No Jurisdiction Because Petitioners’ Argument is Based Solely on State Draft Guidance.....	63
	B. IEPA Performed a Proper EJ Assessment.	64
	1. The EJ Assessment included an analysis of income levels in “the areas of maximum potential impact.”	66
	2. There was no disparate impact on an EJ community in either the EJ GAT mapped area or the SIA.	67
	C. An EJ Assessment Does Not Require A Cumulative Impact Assessment.	69
	D. The EJ Analysis Included Meaningful Public Participation.....	71
	E. IEPA’s EJ Assessment Considered The Appropriate Area.	73
VIII.	IEPA’s Use of a Safety Factor Was Appropriate.	75
	A. Clarification of the Law.....	76
	B. IEPA Appropriately Applied a Safety Factor to Set the SO ₂ Removal Efficiency.	79
	C. IEPA Appropriately Applied a Safety Factor to Set the NO _x BACT Limit.	81
	D. IEPA Appropriately Applied a Safety Factor to Set the PM BACT Limits.....	85
IX.	IEPA Appropriately Addressed Coal Washing.	89
	A. IEPA’s Analysis Rejecting Coal Washing Due to Environmental, Energy, and Economic Costs is Reasonable and Well Supported.	90
	1. Description of Coal Washing.....	90
	2. PSGC’s Analysis of coal washing.....	91
	3. The BACT Analysis.....	92
	4. IEPA’s Conclusions.....	94

B.	Petitioners Fail to Carry Their Burden on Coal Washing Claims,	97
1.	As permitted, the use of washed coal in limited circumstances is BACT.....	97
2.	“Unusual circumstances” were documented.....	98
3.	IEPA correctly evaluated environmental impacts.	100
4.	IEPA carefully considered economic impacts in rejecting coal washing.	102
X.	IEPA Appropriately Determined BACT for SO ₂ Emissions From Prairie State,	104
A.	IEPA Established Multiple SO ₂ Limits In The Permit.	105
B.	IEPA Considered All Relevant Control Technologies.	106
C.	IEPA Utilized The Appropriate Control Efficiency in Setting BACT for SO ₂	108
1.	Ninety-eight percent is the highest achievable removal rate.	109
2.	The Mitchell performance data do not rebut IEPA’s determination.	111
3.	The Longview limit is not inconsistent with IEPA’s BACT determination.	113
4.	The Chiyoda bubbling jet reactor does not support a removal efficiency above 98 percent.	114
D.	IEPA Handled SO ₂ and H ₂ SO ₄ Properly In The BACT Analysis,	115
E.	The Permit Limits Contain Appropriate Averaging Times For SO ₂	116
1.	The averaging times in the Permit are sufficient to protect NAAQS and increment.	117
2.	The 24-hour limit is appropriate.	118
3.	IEPA’s rationale for establishing a 30-day BACT limit was reasonable.	118
4.	BACT does not require 3-hour or 15-minute limits.	119
F.	The Annual 98 Percent Removal Efficiency Is An Appropriate Requirement.....	119
1.	The 98 percent removal efficiency is practically enforceable.	121
2.	It is rational to make the 98 percent removal efficiency become effective 18 months after initial startup.	121
3.	A minimum removal efficiency makes BACT more stringent.....	122
XI.	IEPA’s Decision to Reject The FLM’s Adverse Impact Finding Was Rational,.....	123

A.	IEPA Considered the Information in the Record and Reasonably Concluded There Would Be No Adverse Impact on Mingo.	123
1.	IEPA prompted the Class I analysis.	125
2.	PSGC performed the required modeling and conducted additional analyses to assess impacts on Mingo.	125
3.	The FLM did not provide a rational basis for rejecting PSGC's analysis.	128
4.	IEPA provided a rational basis for its decision to reject the FLM's adverse impact finding.	131
B.	IEPA Properly Consulted with FLM.	134
C.	Petitioners' Factually and Legally Flawed Arguments Do Not Show that IEPA's Decision Lacked a Rational Basis.	135
D.	IEPA Responded to FWS's Coal Washing and Blending Comments.	137
E.	IEPA Had a Rational Basis for Including the Short-Term SO ₂ Limit Reduction Condition in the Permit.	138
F.	IEPA Had a Rational Basis for Including in the Permit the Purchase of Additional SO ₂ Credits.	138
G.	IEPA Satisfied the Notice Requirements.	139
XII.	The PM Limits in the Permit Are BACT.	143
A.	The Total PM Emission Limit Is BACT.	144
B.	IEPA Employed a Reasonable Approach to Controlling Condensable PM Emissions.	145
1.	IEPA acted rationally in light of the limited data available.	146
2.	The pre-construction BACT limit complies with the CAA.	149
C.	IEPA's Explanation for the Total PM Limit Was Plainly Adequate.	150
D.	Petitioners Misunderstand the Law Regarding Public Review of a Plan to Reduce the Total PM BACT Limit.	155
E.	The Filterable PM Limit is BACT.	158
F.	IEPA's Enforcement Approach is Reasonable and Will Be Effective.	162
1.	Prairie State's stack testing requirements will ensure continuous compliance.	163
2.	The use of PM CEMS for compliance assurance monitoring is reasonable.	164
3.	The Permit requires Prairie State to define proper operating conditions and continuously operate under such conditions.	166

XIII.	Dry Cooling is Not BACT.....	168
XIV.	Culpability Analyses Are Proper Under CAA.....	171
	A. IEPA's Decision Was Rational and Supported by EPA Regulations and Policy.	171
	B. IEPA's Allowance of a Culpability Analysis to Demonstrate Compliance with the NAAQS is Consistent With the CAA.	174
	1. Use of a culpability analysis is consistent with EPA guidance and regulations.....	174
	2. Petitioners' statutory argument is flawed.	175
	3. SILs are applicable in attainment areas.	176
	4. Use of culpability analysis is not a policy issue warranting review.....	176
	C. IEPA's Decision Was Not a <i>Post Hoc</i> Rationalization.	177
XV.	SO ₂ Culpability Analysis Was Not Flawed.	179
XVI.	Appropriate SO ₂ Emissions Rates Were Modeled.	181
XVII.	The Additional Impact Analysis Satisfied Regulatory Requirements.	185
XVIII.	IEPA's Use of the 30-day NO _x limit for the Ozone Modeling Was Not Flawed.....	189
XIX.	The NO _x Limit is BACT.....	192
	A. Information in the Record Supports IEPA's NO _x BACT Determination.	192
	B. IEPA Investigated and Properly Rejected the "New" Information Submitted by Petitioners in April 2005.	193
	C. The Haber Report Was Considered And Appropriately Rejected.....	197
	1. The Haber Report is an "advocacy document," not a BACT analysis.....	197
	2. A limit of 0.015 lb/mmBtu is extreme and unrealistic.	198
	3. EPA provided substantial evidence in support of its determination that 0.07 lb/mmBtu is BACT, not 0.015 lb/mmBtu.	199
XX.	IEPA Appropriately Addressed BACT During Startup and Shutdown.....	200
	A. IEPA Developed Secondary Startup and Shutdown BACT Limits for PM, VOM, Sulfuric Acid Mist, and Fluoride.	200
	B. The Alternative Compliance Procedures for SO ₂ and NO _x are Appropriate.	204
	C. The CO Startup and Shutdown Limit is Practically Enforceable.	205

XXI. IEPA Properly Considered "Achievable" Limits.	208
CONCLUSION	210

TABLE OF AUTHORITIES

FEDERAL CASES

- Alaska Dep't of Env'tl. Conservation v. EPA*, 540 U.S. 461 (2004)
- Appalachian Power Co. v. EPA*, 135 F.3d 791 (D.C. Cir. 1998)
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- In re AES Puerto Rico L.P.*, 8 E.A.D. 324 (EAB 1999)
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- In re Cardinal FG Co.*, PSD Appeal No. 04-04 (EAB Mar. 22, 2005)
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In re Maui Elec. Co., 8 E.A.D. 1 (EAB 1998)

In re Mecklenburg Cogeneration Ltd. P'ship, 3 E.A.D. 492 (Adm'r 1990)

In re Metcalf Energy Ctr., PSD Appeal Nos. 01-07 and 01-08 (EAB Aug. 10, 2001)

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(Remand Order and Dismissal of Petitions for Review)

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In re Ogden Martin Systems of Onondaga, Inc., 4 E.A.D. 405 (EAB 1992)

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In re Zion Energy, L.L.C., 9 E.A.D. 701 (EAB 2001)

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In re Air Pollution Control Constr. Permit Issued to Wisc. Elec. Power Co. for the Elm Road Generating Station, Case No. 1H-04-03 (Wisc. Div. HRA) (Aug. 3, 2004 Order on Applicant's Motion to define the Scope of the Proceeding) (Feb. 3, 2005 Findings of Fact Conclusions of Law and Order)

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CAA § 165(a), 42 U.S.C. § 7475(a)

CAA § 169(3), 42 U.S.C. § 7479(3)

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PRELIMINARY STATEMENT

On June 8, 2005, American Bottom Conservancy, American Lung Association of Chicago, Clean Air Task Force, Health and Environmental Justice-St. Louis, Lake County Conservation Alliance, Sierra Club and Valley Watch (“Petitioners”) petitioned the Environmental Appeals Board (the “Board”) of the United States Environmental Protection Agency (“EPA”) to review the Prevention of Significant Deterioration (“PSD”) permit (the “Permit”) issued by the Illinois Environmental Protection Agency (“IEPA”) to the Prairie State Generating Company (“PSGC”) for the Prairie State Generating Station (“Prairie State”), a proposed 1,500 MW coal-fueled power plant in Washington County, Illinois. The Board should deny review.

The administrative record (the “Record”) confirms that IEPA expended great effort during the permitting process to ensure that the Permit complied with all applicable laws and regulations. Both the public and the respective agencies served their roles during the process by commenting, critiquing, and advocating for IEPA to consider every legitimate issue thoroughly. During a permitting process that spanned nearly four years, IEPA carefully evaluated and responded to the voluminous input it received from all sources. Relying on its experience and expertise, and sound information in the Record, IEPA exercised its professional and technical judgment to resolve the issues. The rational basis for IEPA’s decisions is well documented. The process produced a strong, lawful permit for Prairie State.

Prairie State is in the public interest. Prairie State will be a modern facility with state-of-the-art pollution controls and strict permit limits. Its advanced air emission control technology “pushes the envelope,” and its emissions will be far lower than existing coal-fired plants. This efficient, modern plant will produce low-cost energy, which promotes job growth and reduces the disproportionate impact of high energy costs on the health and welfare of those individuals

who are living on low or fixed incomes. Using abundant domestic resources, such as coal, also reduces our Nation's dependence on foreign fuels. Not surprisingly, the public hearing and comments revealed widespread support for the project. Indeed, a number of rural electric cooperatives and municipal power agencies have already contracted to invest in the Prairie State project to help meet their projected load demands in light of shrinking reserves of low-cost baseload electricity. PSGC concurs with these rural electric cooperatives and municipal power agencies and utilities that a present need exists to secure reliable, efficient, low cost energy for their customers.

The public participated at every stage of the permitting process. The initial public comment period began on February 4, 2004, and the public hearing occurred on March 22, 2004. IEPA extended the comment period five times until August 24, 2004, to allow full participation. The public and agencies submitted hundreds of comments to IEPA, each of which received a thorough response from IEPA in its 171-page, 353-item Responsiveness Summary. As described at the end of the Responsiveness Summary in a section entitled "Listing of the Significant Changes Between the Draft and Issued Permit," many of those comments led directly to changes in the Permit. IEPA lowered many of the proposed permit limits and added new conditions to make the Permit more stringent and enforceable. *Cf. In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 764 (EAB 2001) ("[T]he fact is that public involvement has had a significant impact on the terms of the PSD Permit ultimately issued.... [the agency made], in response to public comment, substantial changes.... These changes are 'a testament to the role of public participation in the permit process.'" (citations omitted).

During the process, IEPA also required PSGC to submit many additional analyses to support the Permit Application. For instance, IEPA required PSGC to submit a detailed study of

integrated gasification combined cycle (“IGCC”) technology. PSGC also commissioned a Screening Level Ecological Risk Assessment (“SLERA”) to address endangered species and several follow-up analyses were conducted in response to questions from the agencies. IEPA, EPA and the Fish and Wildlife Service (“FWS”) concurred that Prairie State was not likely to have an adverse impact on endangered species. The best available control technology (“BACT”) analysis was continually updated throughout the process to reflect technological developments and respond to inquiries from IEPA. Questions from the Federal Land Manager (“FLM”) and IEPA triggered additional air quality modeling analyses and refinements. PSGC also provided detailed scientific analyses of visibility and acid deposition to address possible impacts at Mingo Wildlife Management Area (“Mingo”). These submittals and IEPA’s analysis of them have produced a scientifically sound record supporting the issuance of the Permit.

IEPA’s diligence is reflected in the detailed draft and final versions of the Permit, the 29-page Project Summary, the 171-page Responsiveness Summary, the 26-page Calculation Sheet, and the remainder of the Record. Contrary to Petitioners’ allegations that IEPA acted in an arbitrary and capricious manner, the changes to the Permit, the Responsiveness Summary, and the additional required analyses are all strong evidence that IEPA performed its job well. It carefully evaluated the Permit Application, public comments, and supporting materials using a rational and evenhanded approach and produced a strong, lawful permit which should be upheld.

PETITIONERS HAVE NOT SATISFIED THE STANDARD OF REVIEW

The standard of review in a matter before the Board is well-settled. Petitioners must establish that a condition in the Permit is based on “a finding of fact or conclusion of law which is clearly erroneous,” or represents “an exercise of discretion or an important policy consideration which the [Board] should, in its discretion, review.” 40 C.F.R. § 124.19(a). The “power of review should only be sparingly exercised,” and “most permit conditions should be finally determined [by the permitting authority].” 45 Fed. Reg. 33290, 33412 (May 19, 1980), *quoted in* EAB practice manual at 39-40 (EPA June 2004); *see also In re Jett Black, Inc.*, 8 E.A.D. 353, 358 (EAB 1999); *In re Maui Elec. Co.*, 8 E.A.D. 1, 7 (EAB 1998). The test is not whether the Board agrees with every aspect of IEPA’s decisions, but whether those decisions were rational in light of all the information in the record.¹

Review on technical issues is granted even more sparingly and a petitioner bears a “heavy burden” on those issues:

The Board traditionally assigns a heavy burden to petitioners seeking review of issues that are essentially technical in nature. *Moscow*, slip op. at 9, 10 E.A.D. ____; *see also In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001). When the Board is presented with technical issues, we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record. *D.C. MS4*, slip op. at 15, 10 E.A.D. ____.

¹ In several instances in their Petition, Petitioners claim that PSGC has not met its burden of proof. Petitioners fail to understand that once the Permit is issued, *the burden of proof shifts to the Petitioners* to demonstrate that a permit provision is “clearly erroneous.” *See In re Gelman Servs., Inc.*, 2 E.A.D. 460, 462 n.6 (Adm’r 1987) (explaining that whereas applicant may have initial burden to persuade permitting authority to issue the permit, the burden is on petitioners to show clear error on appeal).

In re Teck Cominco Alaska Inc., Red Dog Mine, NPDES Appeal No. 03-09, slip op. at 22 (EAB June 15, 2004). Similarly, on technical issues, Petitioners must do more than merely present an alternative theory to the agency's approach:

Of course, a petitioner cannot gain review of a permit merely by presenting an alternative theory regarding a technical matter. If the Board is presented with conflicting expert opinions, as is the case here, we will "look to see if the record demonstrates that the [permitting agency] duly considered the issues raised in the comments and if the approach ultimately selected * * * is rational in light of all the information in the record, including the conflicting opinions." *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), review denied sub nom. *Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999).

In re Steel Dynamics, Inc., 9 E.A.D. 165, 180 n.16 (EAB 2000).

Petitioners must also do more than simply repeat their objections raised during the public comment period; they must demonstrate that the permitting agency's response is deficient:

Further, in complying with the above requirements, a petitioner must include specific information supporting its allegations. *In re Sutter Power Plant*, 8 E.A.D. 680, 688 (EAB 1999). As the Board has stated on numerous occasions, it is not enough simply to repeat objections made during the comment period. Rather, in addition to stating its objections to the permit, a petitioner must explain why the permit issuing entity's response to those objections is clearly erroneous or otherwise warrants review. *Knauf Fiber Glass*, 8 E.A.D. 127 ("One way that the Board implements the standard of review in 40 C.F.R. § 124.19 is to require petitioners to state their objections to a permit and to explain why the permitting authority's response to those objections (for example, in a response to comments document) is clearly erroneous or otherwise warrants review."); *In re Hawaii Elec. Light Co., ("HELCO")*, 8 E.A.D. 66, 71-72 (EAB 1998); *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997); *In re Puerto Rico Elec. Power Auth.*, 6 E.A.D. 253, 255 (EAB 1995); *In re LCP Chems.*, 4 E.A.D. 661, 664 (EAB 1993). Failure to do so, will result in a denial of review. See, e.g., *HELCO*, 8 E.A.D. at 91; *In re Maui Elec. Co.*, 8 E.A.D. 1, 19-20 (EAB 1998).

In re Zion Energy, L.L.C., 9 E.A.D. 701, 705 (EAB 2001). Moreover, the fact that Petitioners might not be satisfied with IEPA's response is not sufficient. They must present a *compelling* case that a deficient response led to a *clearly erroneous* permit decision:

For a remand, there must be a compelling reason to believe that the omissions led to an erroneous permit determination - in other words, that they materially affected the quality of the permit determination.

In re Mecklenburg Cogeneration Ltd. P'ship, 3 E.A.D. 492, 494 n.3 (Adm'r 1990), *quoted in Steel Dynamics*, 9 E.A.D. at 191.

In attempting to meet their burden, Petitioners may rely only on issues that were raised during the public comment period or not reasonably ascertainable at that time. 40 C.F.R. §§ 124.13, 124.19 (2004). Petitioners are limited to materials that are part of the Record. Permitting authorities are under no obligation to consider comments or evidence received after the close of the public comment period. *See, e.g.*, 40 C.F.R. § 124.18(a)-(b) (2004) (final permit decisions must be based on administrative record, which includes comments received during public comment period); *id.* § 124.13 (to ensure consideration of their comments, interested persons "must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period"); *In re RockGen Energy Ctr.*, 8 E.A.D. 536, 557-58 (EAB 1999).

Judged by these standards, the Board should deny review of IEPA's decision to issue the Permit. IEPA's determinations were based on ample evidence in the Record, the Permit was the product of reasonable judgments and, while Petitioners may wish to argue policy or philosophy, the decisions made in the Permit reflect the implementation of regulatory language.

Petitioners offer no alternative BACT analysis or air quality modeling. Petitioners' case boils down to this: Petitioners simply disagree with the decisions reached by the IEPA. They

merely raise questions about certain issues and, in some cases, point to information in support of their positions, but they offer nothing leading to the conclusion that IEPA's actions were clearly erroneous. IEPA addressed all of Petitioners' relevant concerns in the Responsiveness Summary in a rational manner. While IEPA's decisions may not be to Petitioners' liking, they are not clearly erroneous, and they implicate no important policy issues that warrant granting review.

Petitioners have failed to meet the standard of review. For these reasons and those set forth in detail below, PSGC respectfully requests that the Board deny review.

DESCRIPTION OF THE PROJECT

IEPA issued PSGC an air quality permit on April 28, 2005, to construct Prairie State, a pulverized coal steam electric generating station in Washington County, Illinois. Prairie State will consist of two 7,450 mmBtu/hour (approx.) pulverized coal ("PC") boilers. The fuel for the Prairie State boilers will generally be raw Illinois No. 6 coal from an underground mine to be developed near the boiler complex (the "Mine"). The start-up fuel will be natural gas. The coal will nominally have four percent sulfur by weight. The boilers are also permitted to be able to use washed Illinois Nos. 5 and 6 coal from other mines under certain restrictions in limited circumstances.

Prairie State will also have an auxiliary boiler, two cooling towers, roads and parking areas, diesel generators and fire pumps, and equipment for storing, processing, and handling coal, limestone, coal combustion waste, and other materials. The advanced pollution control equipment on the main boilers will be low-nitrous oxide burners and a selective catalytic reduction ("SCR") unit for reduction of nitrous oxide ("NO_x"); a dry electrostatic precipitator ("ESP") for control of particulate matter ("PM"); a wet flue gas desulfurizer ("WFGD") for control of sulfur dioxide ("SO₂") and certain acid gases; and a wet electrostatic precipitator ("WESP") for control of acid gases and fine particulate. This air emission control train also collectively controls hazardous air pollutants and raises the bar for overall performance.

Prairie State will be located in an area that is classified as in attainment with all National Ambient Air Quality Standards ("NAAQS"), thus a PSD permit is required. On October 19, 2001, Prairie State submitted its Application for a PSD permit. In response to comments from IEPA, Prairie State submitted revisions to its Permit Application on October 11, 2002. The revised Permit Application contained an updated BACT analysis and voluminous data supporting revised emissions from the facility for SO₂, NO_x, and sulfuric acid mist ("H₂SO₄"). It

also contained new air modeling analyses and a new Additional Impact Analysis. After continued discussions with the IEPA and other agencies, PSGC submitted additional information and analyses.

In January 2005, IEPA issued a final Permit. Petitioners appealed the Permit on a variety of grounds. On March 25, 2005, the Board remanded the Permit to IEPA on grounds that the Responsiveness Summary had been issued after the Permit. *In re Prairie State Generating Station*, PSD appeal No. 05-021 (Mar. 25, 2005). In accordance with EAB's order, IEPA fully considered all comments and issued the current Permit and a new Responsiveness Summary simultaneously on April 28, 2005. On June 8, 2005, Petitioners again appealed. Prairie State moved to intervene on June 14, 2005, and submits this Response urging the Board to decline review (the "Response").

RESPONSE TO PETITIONERS' SPECIFIC ISSUES

I. IEPA PROPERLY ADDRESSED ENDANGERED SPECIES UNDER STATE LAW.

Petitioners argue that the Permit should be remanded because of alleged problems with the interagency consultation between IEPA and Illinois Department of Natural Resources ("IDNR") over the Eastern Narrow Mouth Toad (the "toad"), which Illinois has designated as a threatened species.² IEPA and IDNR conducted their consultation pursuant to Illinois state law. *See* 17 IAC § 1075; RS No. 316 at 149-50 (INTV Ex. 4).³ Petitioners cite various emails and assert violations of the PSD public participation requirements. No such violations occurred; Petitioners merely speculate about the interpretation of selective emails and what occurred during the state consultation process. A complete reading of the information in the Record reflects that IEPA had a rational basis to allay concerns about Prairie State's possible impacts on the toad. Furthermore, any issue related to the consultation is a state law issue over which the Board lacks jurisdiction. Therefore, review of this issue should be denied.

Petitioners' argument is based on an email from Laurel Kroack, IEPA, to Dianna Tickner, PSGC, requesting information with respect to the toad and PSGC's plans relating to the procurement of limestone for the scrubbers at Prairie State. According to Petitioners' theory, this is a PSD issue because the threatened toad's habitat could be impacted by the limestone mining, which is necessary for the SO₂ control technology selected in the BACT analysis. That impact, assert Petitioners, is an environmental consideration that should have been considered during the

² The Eastern Narrow Mouth Toad was designated a threatened species pursuant to the Illinois Endangered Species Act (520 ILCS 10 (2005)). *See also* 17 IAC § 1010.30 (2005).

³ The Responsiveness Summary references will be in the form RS No. ___ at [page] and Intervenor's Exhibits will be referenced as INTV Ex. ___.

BACT analysis. Petition at 7-8. In making their argument, Petitioners ignore Ms. Tickner's response to Ms. Kroack explaining why the limestone mining would have no adverse impact on the toad or its habitat:

We have not signed a contract with any particular supplier [of limestone] yet. We have solicited bids from both Illinois and Missouri. Some of the quarries are near the Mississippi River but others are not. The quarry which we purchase limestone from must be permitted so in order to get or keep their mining permit they would have to protect any endangered species I think under the mining laws. I know on our mine permit we had to address each species and a study was completed. I think the IDNR permitting process would protect the species.

Email from Dianna Tickner, PSGC, to Laurel Kroack, IEPA (Sept. 28, 2004 at 9:26 a.m.) (this response, which Petitioners ignore, is in the Record *on the same page* as the email quoted by Petitioners) (INTV Ex. 7) (Pet. Ex. 26).

As reflected in Ms. Tickner's response, if the limestone comes from a mine in Illinois, where the toad is protected, the mine will be subject to the consultation process and will be required to show that it does not harm the toad or its habitat. *See* 17 IAC § 1075.30 (identifying activities that trigger consultation, including mining). Thus, the toad will be protected if PSGC obtains its limestone from a mine in Illinois. If PSGC obtains the limestone from a mine in Missouri, the issue will be moot because the toad is not threatened or endangered in Missouri. *See* Mo. Code Regs. Ann. tit. 3 § 10-4.111 (listing Missouri's endangered species).

Furthermore, as Ms. Kroack's email to Ms. Tickner indicated, IDNR's draft opinion had already concluded that Prairie State itself would not adversely affect threatened or endangered species. INTV Ex. 7, Pet. Ex. 36.

Moreover, there is support for IEPA's decision in the Record independent of Ms. Tickner's email. *See* Letter from Ms. Tickner to Mr. Todd Rettig, IDNR, regarding Eastern Narrow Mouth Toad (Sept. 17, 2004) (INTV Ex. 8) (enclosing Malcolm Pirnie's supplement to

the SLERA to address the toad indicating no adverse impact). Thus, the Record reflects no unaccounted for direct or indirect impact on the toad or its habitat. This was confirmed by the Biological Opinion issued by IDNR. Letter from Todd Rettig, IDNR, to Laurel Kroack, IEPA (Nov. 1, 2004) (INTV Ex. 9) (Prairie State is “not likely to jeopardize a listed species or its essential habitat ...”). To the extent there was any requirement that IEPA consider impacts to the toad, they did so and they had a rational basis and support in the record for not being concerned.

Petitioners also cite an internal IDNR email from a Mr. Shank of IDNR (the “Shank email”). They argue that, because they were unable to obtain the draft biological opinion and other internal IDNR correspondence mentioned in the Shank email, the PSD public participation was flawed. The Shank email, though, is taken out of context. Nothing in the Record suggests that Mr. Shank was aware of the emails between Ms. Kroack and Ms. Tickner regarding the protections afforded the toad in the limestone mining permit process. Nor is the response to Mr. Shank’s email in the Record. Indeed, neither the IDNR email cited by Petitioners nor the draft biological opinion and other internal IDNR correspondence are part of the PSD Permit Record, nor should they be.⁴ The consultation that gave rise to the Shank email and other information sought by Petitioners occurred under an Illinois law unrelated to the PSD program. IEPA entered into consultation with IDNR to satisfy its obligation under 17 IAC § 1075, which implements § 11(b) of the Illinois Endangered Species Act (520 ILCS 10/11) and § 17 of the

⁴ Petitioners obtained the Shank email through a FOIA request to IDNR. Petition at 6. Their request for other documents, also in the FOIA request, was apparently denied by IDNR. Any issues with the response to that FOIA request are a question of state law. The state law also requires IDNR to make its own provisions for public involvement. 17 IAC § 1075.70 (2005). Thus, Illinois law, and not the PSD program, governs public participation in the consultation process.

Illinois Natural Areas Preservation Act (525 ILCS 30/17). Neither of these statutes nor the implementing regulations are in any way part of the federal PSD program.

Because the Shank email concerns only an issue created by state law, the Board does not have jurisdiction to review the Permit on this basis. As the Board has stated in other cases, its jurisdiction is limited to federal PSD issues and state law is not part of the review. *In re Metcalf Energy Ctr.*, PSD Appeal Nos. 01-07 and 01-08, slip op. 42-43 (EAB Aug. 10, 2001) (issues involving state or local law may not be adjudicated by the Board); *In re W. Suburban Recycling & Energy Ctr.*, 6 E.A.D. 692, 704 (EAB 1996) (“The Board and its predecessors have made clear that even where a permit proceeding involves requirements under both state and federal law, the scope of the Board’s review is limited to issues relating to the federal PSD program and the Board will not assume jurisdiction over permit issues unrelated to the federal PSD program.”); *In re Knauf Fiber Glass, GMBH*, 8 E.A.D. 121, 161-62 (EAB 1999) (jurisdiction is limited to federal PSD issues) (“*Knauf I*”).

As explained above, Petitioners attempt to convert speculation about the toad into a PSD issue by arguing that it is an environmental concern related to the use of limestone and thus part of the BACT analysis. Under Petitioners’ theory, any “environmental concern” associated with the project would be part of BACT and, thus, part of PSD. The Board, however, has stated in the past that not all environmental issues are part of the PSD process. *Knauf I*, 8 E.A.D. at 127 (“The PSD review process is not an open forum for consideration of every environmental aspect of a proposed project, or even every issue that bears on air quality.”). Clearly, this would be such an issue. In any event, Ms. Tickner’s response, which is supported by IDNR’s regulations, points out that the limestone mine permitting process would eliminate this as a concern.

The IEPA has a reasoned basis for determining under state law that Prairie State would not have an adverse impact on the toad. Petitioners have not raised a cognizable issue with respect to the Illinois process for protecting state threatened and endangered species. As this is a state law issue, the Board must deny review because it lacks jurisdiction. For the same reasons, it also is not an important policy issue for the Board to review.

II. IEPA CORRECTLY REJECTED THE ASSERTION THAT IT HAD “BROAD LEGAL AUTHORITY” UNDER THE CAA TO CONSIDER THE NEED FOR, AND ALTERNATIVES TO, PRAIRIE STATE.

Petitioners argue that IEPA should have considered “whether there is a need” for Prairie State, as well as “alternatives to coal such as natural gas, renewable energy sources and energy efficiency.” Petition at 9. Similarly, Petitioners contend that the IEPA should have considered whether PSGC should be limited to constructing a “smaller power plant with less overall emissions and fewer impacts on public health and the Mingo National Wildlife Refuge” than the proposed Prairie State facility. *Id.* According to Petitioners, in determining whether or not to issue a PSD permit, IEPA has “broad legal authority” under the CAA to consider both the “need” for Prairie State and “alternatives” to the facility that might be more appropriate. *Id.* at 11.

The CAA does not support Petitioners’ argument. Indeed, a federal court of appeals has already rejected their argument in another case. The PSD permitting process properly focuses on the air quality impacts attributable to the proposed facility for which a PSD permit is sought. It is not a mechanism authorizing a permitting authority to insert itself into matters uniquely within the expertise of state public utility commissions and local siting boards regarding the need for, and appropriateness of, proposed new electric-generating facilities.

Notably, Petitioners are able to point to only one statutory provision in support of their assertion that the CAA “establishes the obligation of a permitting agency to consider ... alternatives to major new sources of air pollution.” *See* Petition at 13 (citing CAA § 165(a)(2)). That provision states, in relevant part, that “[n]o major emitting facility ... may be constructed” unless:

a public hearing has been held with opportunity for interested persons including representatives of the Administrator to appear and submit written or oral presentations on the air quality impact of such source, *alternatives thereto*, control technology requirements, and other appropriate considerations.

CAA § 165(a)(2), 42 U.S.C. § 7475(a)(2) (emphasis added). Petitioners construe this congressional instruction, which allows interested persons to submit comments on alternatives to a proposed source, as imparting on permitting authorities the power to deny a PSD permit solely on the basis that constructing a different type of facility (or not constructing the proposed facility at all) would be more “appropriate.”

The IEPA correctly concluded that it had no such authority under the CAA and therefore was not required to consider such matters as “need for” and “alternatives to” Prairie State in deciding whether to issue a PSD permit for the facility. In particular, the IEPA rejected Petitioners’ expansive reading of CAA § 165(a)(2), determining that the plain language of the provision “does not ... require a permitting authority to conduct an analysis or otherwise require from an applicant, information regarding alternative sites, locations or project types.” RS No. 19 at 13-14 (INTV Ex. 4). Rather, the IEPA said this language “merely establishes certain parameters for public participation in the PSD permitting process, confirming the right of the public, including individuals who may be interested in developing other projects in an area, to comment on alternatives to a proposed source during the permitting process.” *Id.* “While the provision requires that a broad range of public comment must be allowed in the permitting process,” the IEPA continued, “it cannot be assumed that Congress intended that a wide-ranging analysis of alternatives must be conducted by the permitting authority.” *Id.* Far from being clearly erroneous, this conclusion of law is plainly correct. Petitioners’ arguments to the contrary are without merit.

When Congress intends for a state permitting authority exercising delegated authority under the CAA to consider alternatives to a proposed source, it expresses that intent in unmistakable terms. Specifically, the nonattainment New Source Review (“NSR”) provisions of

the CAA state plainly that a “permit to construct and operate may be issued if,” among other things, an

analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

CAA § 173(a)(5), 42 U.S.C. § 7503(a)(5). This provision from the CAA’s nonattainment NSR program, expressly requiring the permitting authority to undertake an analysis of alternatives, stands in stark contrast to the language from CAA § 165(a)(2) on which Petitioners rely.

Indeed, the U.S. Court of Appeals for the Sixth Circuit repudiated the very argument that Petitioners are making. *See Hancock County v. EPA*, 742 F.2d 1455, 1984 U.S. App. LEXIS 14024 (6th Cir. Aug. 14, 1984) (unpublished) (INTV Ex. 41). The petitioners in that case sought review of a PSD permit issued by EPA to Kentucky Utilities Company for a two-unit coal-fired electric generating plant. Citing the language of CAA § 165(a)(2), the petitioners alleged that “EPA failed to give adequate consideration to all of the ‘relevant’ factors” supposedly required by the CAA, including “local community opposition, the ‘nonconstruction’ alternative, alternative construction sites, and impacts on the local industry and economy.” *Id.* at *17-18.

In response, the court noted that EPA interpreted the CAA PSD provisions as “limiting its authority in regard to the PSD process to a review of air quality related impacts of a proposed source,” an interpretation for which there was a “rational basis.” *Id.* at *19. Among other things, the court observed, while states were “free to adopt more stringent standards than those required under” the CAA, Kentucky had “not seen fit to adopt regulations in regard to the PSD process requiring consideration of those factors” cited by the petitioners. *Id.* at *20. In addition, the court continued, the factors cited by the petitioners “are considered in two related state proceedings.” *Id.* at *20, *citing* Ky. Rev. Stat. § 278.025 (1981) (certificate of environmental

compatibility). “Under these circumstances,” the court concluded, “we hold that EPA’s authority under the PSD process is limited to a review of air quality related impacts, which was properly conducted in the instant case.” *Id.* In light of *Hancock County*, IEPA clearly reached the correct result in *Prairie State’s* case.

Common sense also underscores the ultimate flaw of Petitioners’ position. Taken to its logical end, Petitioners’ argument that a permitting agency (be it EPA or a state agency such as the IEPA) has “broad legal authority” under the PSD provisions of the CAA to dictate the “need” for, and “alternatives” to, a proposed major stationary source would result in the permitting agency setting local social and economic policies. That is, the permitting agency would be responsible for determining not merely whether the proposed source would be operated in conformity with the CAA, but also whether the source should be constructed at all. Under Petitioners’ reading of the CAA, every major stationary source requiring a PSD permit (*e.g.*, every paper mill, refinery, cement factory, chemical processing facility, aluminum smelter, and, for that matter, every large dry cleaner or feed mill) could be built only after EPA had passed judgment on whether such source was “needed,” where it should be located, and whether some “alternative” to the source might not be more appropriate. These are decisions left to the proper state and local authorities.

For their part, Petitioners are unable to point to any persuasive authority to counter the plain language of the CAA and the reasoning in *Hancock County*, or to support their own remarkably expansive vision of EPA’s role in PSD permitting. Instead, Petitioners rely heavily on the characterizations of EPA’s supposed authority contained in briefs submitted by EPA in *W. Suburban Recycling & Energy Ctr.*, 6 E.A.D. 692; *In re EcoEléctrica L.P.*, 7 E.A.D. 56 (EAB 1997); and *RockGen Energy Ctr.*, 8 E.A.D. 536. Although Petitioners selectively quote EPA’s

briefs, *none of the Board's decisions* lends any direct support for Petitioners' expansive view of the agencies' authority under PSD. *See* Petition at 11, 15, 16. Petitioners also quote approvingly from a "thoughtful article" from a 2004 edition of the *Environmental Law Report* in which the author asserts that "power plants [such as Prairie State] warrant special scrutiny in the PSD permitting process." *See id.* at 16.⁵ This article provides scant support for Petitioners' position. At the outset of his article, the author acknowledges that the "views expressed ... are solely those of the author and do not reflect the position of ... EPA." Pet. Ex. 42. Petitioners are otherwise left without any authority for their allegation that IEPA's decision in this matter is "clearly erroneous" and a "significant policy issue warranting [this] Board's review." Petition at 17. Lacking authoritative support for their theory of the CAA, Petitioners' claim on this issue should be denied.

⁵ The author of the *ELR* article, Gregory R. Foote, a lawyer in EPA's Office of General Counsel, was also involved in the preparation of all three of the EPA briefs in *Suburban Recycling & Energy Ctr.*, *EcoEléctrica*, and *RockGen* upon which Petitioners place so much reliance.

III. IEPA DID NOT VIOLATE ANY NEPA COORDINATION REQUIREMENT.

Petitioners argue that IEPA failed to comply with 40 CFR § 52.21(s), and that the Board should remand the Permit “for USEPA to comply with the mandatory coordination and review requirements.” Petition at 21. Section 52.21(s) states:

Whenever any proposed source or modification is subject to action by a Federal Agency which might necessitate preparation of an environmental impact statement pursuant to the National Environmental Policy Act (42 U.S.C. 4321), review by the Administrator conducted pursuant to this section shall be coordinated with the broad environmental reviews under that Act and under section 309 of the Clean Air Act to the maximum extent feasible and reasonable.

Based on the actual language in 40 C.F.R. § 52.21(s), Petitioners’ argument is fatally flawed. Petitioners fail to acknowledge the overarching fact that *no* federal agency action pertaining to Prairie State resulted in a review under the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321 *et seq.* Moreover, in many instances Petitioners merely repeat the public comments and fail to refute IEPA’s reply in its Responsiveness Summary. Petitioners have not shown that IEPA’s action was either arbitrary and capricious or an abuse of discretion, much less clear error. For these reasons, review should be denied.

A. IEPA’s Responses to Petitioners’ NEPA Coordination Comments Were Plainly Sufficient.

Petitioners argue that EPA failed to respond to its comments regarding coordination with other agencies’ NEPA reviews and that IEPA ignored the NEPA review coordination

requirements when it issued the Permit. Petition at 19. The Record is clear that IEPA responded to the comments in a reasonable manner.⁶ RS No. 317 at 150-51, No. 318 at 151 (INTV Ex. 4).

Petitioners assert that IEPA cannot “issue the permit absent USEPA fulfilling its [NEPA] coordination obligations.” Petition at 19. However, a permitting agency is not required to delay the issuance of its PSD permits until completion of the NEPA review process, especially one that may never occur. This issue was decided in *Hadson*, where the Board held that, with respect to § 52.21(s):

coordination is all that is required of the PSD permitting authority, and only to the extent feasible and reasonable. As used in this regulation, “coordinate” is best given its everyday meaning, namely to harmonize or to act together in a concerted way. In our view, then, this regulation does not require a State to refrain from issuing a PSD permit until the NEPA review process is complete.

Hadson, 4 E.A.D. at 299 (emphasis in original). Accordingly, IEPA may issue a PSD permit prior to the completion of the NEPA review process, if one is required.

B. There Was No NEPA Analysis With Which EPA Or IEPA Could Coordinate to Any Extent.

Petitioners argue that they “met their burden” by identifying several purported federal actions relating to Prairie State that “might” require NEPA review. Petition at 20. This is both factually and legally inaccurate for at least three reasons. First, Petitioners allege that IEPA

⁶ EPA had no duty to respond to comments independent of IEPA. IEPA has the delegated authority to answer comments pertaining to the NEPA review coordination requirements and also the authority to determine whether coordination with a federal agency’s NEPA review was necessary. Petitioners essentially concede that IEPA may “play a significant role in facilitating [NEPA] coordination and review.” Petition at 18 n.7. In fact, “[a] full delegation” of § 52.21 from EPA to IEPA was effective on April 7, 1980. 46 Fed. Reg. 9580, 9582 (Jan. 29, 1981). Therefore, IEPA has, among other things, the authority to review “all applications for approval of proposed sources in Illinois” that are subject to § 52.21. *Id.* This is consistent with *Hadson*, discussed below, which, in the context of a PSD permit challenge regarding § 52.21(s), never mentions EPA involvement and implies that Virginia could have conducted the § 52.21(s) coordination, if it was necessary. *In re Hadson Power 14 – Buena Vista*, 4 E.A.D. 258, 299-300 (EAB 1992).

should have coordinated with the Army Corps of Engineers regarding the authorization to construct the water intake and discharge structures for Prairie State. However, Petitioners fail to note that those structures were authorized under Nationwide Permits, and the NEPA obligations for that authorization were met when the Corps issued Nationwide Permits covering that work. Petitioners also speculate that there might be two federal actions pertaining to the construction of transmission lines and a rail spur. In other words, Petitioners failed to identify any actual federal agency action that might necessitate a review pursuant to NEPA with which EPA or IEPA could coordinate, to any extent.⁷

Second, the federal action and two potential federal actions identified by Petitioners are unrelated to air emissions, air quality or any other aspects of the PSD permitting process. Section 52.21(s) of Title 40 of the C.F.R. indicates that the “review by the Administrator conducted pursuant to *this section* shall be coordinated...” (Emphasis added). “[T]his section” refers to § 52.21, entitled “Prevention of significant deterioration of air quality.” Accordingly, the water intake and discharge structures, transmission lines, and rail spur are irrelevant to the § 52.21(s) coordination requirement, because they are unrelated to the PSD permitting process. This conclusion is consistent with *Hadson* which stated, “[t]he only portion of the NEPA review relevant to this permit proceeding is that pertaining to the coal conveyance;” thereafter, the Board dismissed the claims related to § 52.21(s) coordination of non-PSD related issues, namely the utility improvements, by stating “[t]here is nothing in the record that indicates how or why

⁷ This conclusion is consistent with the Responsiveness Summary, which indicates that “this comment does not identify any federal actions associated with the proposed plant that would require the preparation of an EIS, and, instead merely speculates that such a requirement might exist.” RS No. 317 at 150-51 (INTV Ex. 4).

the utility improvements related to the PSD permit.” *Hadson*, 4 E.A.D. at 299-300 n.62. In other words, only activities that have an air quality impact must be coordinated.

Third, even if they were able to raise non-PSD issues with respect to § 52.21(s), Petitioners misunderstand their burden. Petitioners must demonstrate that IEPA’s actions were clear error. Petitioners must do more than identify *potential* federal actions and a federal action for which the § 52.21(s) NEPA coordination obligations have already been met. The requirements of § 52.21(s) are triggered when a proposed source *is subject to action by a federal agency which might necessitate* preparation of an environmental impact statement. Accordingly, Petitioners must demonstrate that Prairie State “is subject to” a federal agency action. The language “which might necessitate preparation of an environmental impact statement” applies only after identifying the applicable federal agency action. Moreover, the coordination need be to the maximum extent feasible and reasonable. Therefore, even if a federal agency action is arguably identified, once the NEPA review has been conducted with respect to that federal agency action, it is not required to be repeated.

1. Petitioners have not identified any federal action for which a NEPA review with respect to Prairie State might be necessary.

Petitioners allege only one actual federal action in their comments or their brief: the U.S. Army Corps of Engineers (“Corps”) issuance of a letter of authorization to use a Nationwide Permit for the construction of the water intake and discharge structures. This letter, however, would not necessitate preparation of an environmental impact statement (“EIS”) for Prairie State, as the NEPA requirements had been fulfilled when the Nationwide Permits were issued. Accordingly, no coordination between IEPA and the Corps was required.

The Corps determined that the Prairie State project met the criteria to qualify for a Nationwide Permit. *See* Letter from S.L.J. Horneman, Corps, to C. Kelly, PSGC (Aug. 27,

2004) (INTV Ex. 10) (“Horneman Letter”) (“The Corps of Engineers has determined that ... this activity is authorized ... by several existing Department of the Army nationwide permits....”). The relevant NEPA review with respect to Nationwide Permits (*i.e.*, the “major Federal action”) occurred when the Corps issued the Nationwide Permits in a 2002 rulemaking. 67 Fed. Reg. 2020, 2025-26, 2040 (Jan. 15, 2002) (describing NEPA review). Accordingly, because the Corps determined that Prairie State qualified for a Nationwide Permit, it was unnecessary for the Corps to conduct another NEPA review specifically for Prairie State. As the Corps indicated in the response to comments regarding the reissuance of the Nationwide Permits, an EIS is not “warranted whenever an NWP is used to authorize a private development project, because the NWPs authorize only those activities that occur within the Clean Water Act § 404 limited scope of review and that have no more than minimal adverse effects on the aquatic environment.” *Id.* at 2025. Accordingly, IEPA could not coordinate with the Corps because another NEPA analysis was not necessary and there was nothing with which to coordinate.

2. Coordination with speculative federal actions is not required.

Petitioners allege that two speculative federal actions exist with respect to Prairie State for which a NEPA review may be necessary. One theoretical federal action identified in Petitioners’ comments is the Federal Energy Regulatory Commission (“FERC”) approval of Prairie State’s transmission lines. Petition at 20. However, Petitioners offer no evidence that FERC has taken any federal action, that a NEPA review is even necessary in order to install the lines, or that an associated NEPA analysis was ongoing at the time of permitting with which IEPA could have coordinated. Pursuant to *Hadson*, IEPA was not required to postpone the permitting process in order for a FERC NEPA analysis to be performed. *Hadson*, 4 E.A.D. at 299.

The Petition also identified an issue they claim that is “likely” to involve a federal agency — the approval of a rail spur by the federal Surface Transportation Board (“STB”). Petition at 20-21.⁸ While IEPA acknowledges that a rail spur will serve Prairie State (RS No. 302 at 139 (INTV Ex. 4)), Petitioners cite nothing in the Record suggesting that PSGC applied for permission to construct and operate any such rail spur, or that STB has taken any federal action with respect to a Prairie State rail spur permitting. In any event, there was no NEPA review regarding any rail spur with which IEPA was required to or could have coordinated.

Petitioners’ claim regarding the rail spur is unclear.⁹ If Petitioners are arguing that IEPA failed to coordinate with a NEPA review that was pending for a rail spur at the time of IEPA

⁸ Arguably, this issue should be dismissed because it was not raised in the public comments. While the rail spur is discussed with respect to other PSD requirements, it was not raised in the context of triggering the requirements of § 52.21(s). See RS Nos. 340-43 at 161-63 (no reference to rail spur in context of comments on § 52.21(s)).

⁹ Petitioners cite a request by Ameren Energy to construct one of two rail lines in Montgomery County, Illinois, or in Montgomery and Bond Counties, Illinois, indicating that STB performed an environmental assessment (“EA”) for the Ameren Energy rail spur. Petition at 21; see also 70 Fed. Reg. 30183 (May 25, 2005). The Ameren Energy rail spur, though, is irrelevant to Prairie State. The Ameren Energy rail spur will not serve or even be in the same county as Prairie State. Petitioners offer no evidence or legal citation that STB will or must become involved specifically with the Prairie State rail spur. Unlike the Ameren spur, the Prairie State rail spur “will be constructed from *an existing* Illinois Central line...” PSGC Updated PSD Application at 2-3 (Oct. 11, 2002) (emphasis added) (INTV Ex. 6). And, while the Ameren Energy plan involves the construction of a 5-mile rail spur, it also involves a much larger project — the construction of a 13-mile rail line that will be operated by Ameren Energy and will tie into two common carriers. See Jeffery Tomich, Northeast Railroad News, “Ameren Aims to Put Coal on the Fast Track” (May 31, 2005) (INTV Ex. 12). (Since, as discussed in n.8 *supra*, this issue was not raised in the public comments, but first raised in the Petition (Petition at 21), PSGC respectfully submits an exhibit that is not in the Record.) This is distinctly different from Prairie State’s rail spur that will be constructed on private property and that will connect to one existing Class I common carrier. We note that the Prairie State rail spur was already addressed by the Corps as part of the Prairie State wetlands review and covered by the Prairie State Nationwide Permit authorization. Letter from D. Tickner, PSGC, to J. Collins, FWS (May 7, 2004) (citing Corps’ permit, Tab C: “the Army Corps of Engineers issued Prairie State a nationwide permit to construct a water intake structure on the Kaskaskia River as well as authorizing the construction of the rail spur across an area of wetlands....”) (INTV Ex. 11).

permitting, they provide no evidence that the rail spur has or might necessitate any such review, or that any such analysis in fact occurred. If no analysis was pending, IEPA was not required to refrain from issuing the Permit until the rail spur NEPA process was complete (*see Hadson*, 4 E.A.D. at 299) — assuming a NEPA review was ever required for the rail spur.

Accordingly, because IEPA had nothing to coordinate with at the time of approval of the Permit, neither EPA nor IEPA could, pursuant to § 52.21(s), coordinate with either the Corps, FERC, or STB.¹⁰ This is consistent with IEPA's reply in the Responsiveness Summary that "this comment does not identify any federal actions associated with the proposed plant that would require the preparation of an EIS, and, instead merely speculates that such a requirement might exist." RS No. 317 at 150-51 (INTV Ex. 4). Petitioners' argument must fail.

C. Coordination Was Not Mandatory In This Case.

Petitioners argue, in the abstract, that the "obligation to coordinate is mandatory" and that IEPA suggested otherwise in a response to comments. Petition at 19. In fact, Petitioners mischaracterize IEPA's response. IEPA was simply saying that § 52.21(s) does not require the action suggested by commenters. IEPA did not state that § 52.21(s) is not mandatory. Rather, IEPA stated that § 52.21(s) "does not establish the mandate of coordination" within the circumstances of the comment. RS No. 317 at 150-51 (INTV Ex. 4). If, as discussed above, there is nothing to coordinate with, then coordination is not only unnecessary, it is impossible.

¹⁰ Petitioners also claim that there was no evidence that EPA or IEPA "investigated whether any federal agency may have a NEPA review role...." Petition at 18. This argument is irrelevant because the end result would have been the same — EPA had nothing to coordinate with. Regardless, EPA and IEPA were copied on correspondence between the Corps and Prairie State from which the agencies could have concluded that NEPA reviews were unnecessary for the water intake and discharge structures, transmission lines, and rail spur. *See Horneman Letter* (INTV Ex. 10).

IV. IEPA PROPERLY REJECTED IGCC AS BACT.

Despite IEPA's well-documented and reasoned analysis rejecting IGCC as BACT for Prairie State, Petitioners argue that, as a matter of law, IEPA acted improperly. They seek to remand the Permit so that IEPA can "assemble a record of relevant facts" to support IGCC as BACT. Petition at 22. Taking information out of context, Petitioners argue that IEPA "incorrectly applied a test mandated by the regulations and did not assemble the facts necessary to determine the outcome of that test." *Id.* Ignoring most of IEPA's analysis and the supporting Record, Petitioners argue that IEPA rejected IGCC solely because commercial financing would not be available for it. Petitioners also make the circular argument that IEPA must determine that IGCC is BACT, so the evolving technology will attract investment, become commercially viable, and thus become BACT.

Petitioners simply disagree with IEPA's conclusion about IGCC; they offer nothing suggesting IEPA was clearly erroneous in rejecting IGCC. Petitioners ignore the fully developed Record that supports IEPA's decision and its well-articulated basis. Unlike many other states,¹¹ IEPA required an extensive analysis of IGCC as part of the BACT analysis. Contrary to Petitioners' claim as to IEPA's rationale for rejecting IGCC, the Record reflects that IEPA: (1) carefully reviewed the study conducted by SFA Pacific and other information submitted into the Record; (2) found that IGCC currently offered no clear advantage over pulverized coal technology in terms of efficiency or lower emissions; (3) concurred that, due to its lack of reliability and high cost relative to pulverized coal technology, IGCC was not yet a commercially

¹¹ Other states have simply concluded that IGCC is not commercially available, or that IGCC is not a similar technology and that including it in the BACT analysis would impermissibly redefine the project. *See, e.g., In re Air Pollution Control Constr. Permit Issued to Wisc. Elec. Power Co. for the Elm Road Generating Station*, Case No. IH-04-03 (Wisc. Div. HRA), (Feb. 3, 2005 Findings of Fact Conclusions of Law and Order) (INTV Ex. 20).

viable technology; (4) determined that it could not delay issuance of the Permit in the hopes that IGCC would eventually become commercially viable for application at Prairie State; and (5) concluded that, while IGCC offered future potential for carbon dioxide (“CO₂”) sequestration, that capability is not demonstrated and, in any event, is not required as a matter of law.

The Record supports IEPA’s determination that IGCC is not BACT for Prairie State due to the higher costs, lower reliability, and lack of any advantage in terms of emissions reductions. While Petitioners may disagree with IEPA’s analysis, they have not shown it is clearly erroneous, nor do Petitioners raise any novel or compelling issues implicating important policy matters. IEPA has simply implemented regulations according to its consistent practice. Therefore, the request for review on this issue should be denied.

A. IEPA Had a Rational Basis for Rejecting IGCC.

The Record demonstrates that IEPA required, was provided with, evaluated, and relied upon a thorough analysis of IGCC as a potential alternative to pulverized coal technology for Prairie State. Among other things, PSGC retained SFA Pacific, a leading consulting firm and proponent of gasification technology, to evaluate whether or not IGCC was appropriate as BACT for Prairie State.

1. The Permit Application evaluated IGCC.

PSGC evaluated IGCC in its October 2002 Permit Application. It concluded that, while Peabody Energy, the parent company of PSGC, actively participated in Department of Energy (“DOE”) demonstration projects promoting use of clean coal technology, including IGCC, it was not viable for application at Prairie State. Permit Application, App. C, § 3.1.1 at C-8 to C-14 (Oct. 11, 2002) (INTV Ex. 6). The Application presented information showing that the proposed Prairie State emissions were comparable to existing IGCC plants, and that IGCC’s size limitations, reliability, and cost issues prevented its use as a base-load power plant, such as

Prairie State. PSGC specifically noted that reliability at one IGCC failed to meet 50 percent and that all IGCC facilities built to date have required government subsidies. *Id.* at C-12.

The Application concluded:

PSGC selected [pulverized coal] boilers because they meet the design basis for the facility.... They have a proven track record of being available and capable of generating 1,500 MW when operating at 100% load with this fuel. The other power generating techniques evaluated are not capable of providing a generating output within the design, reliability and operational requirements of the [Prairie State] project.

Id. at C-9.

2. Follow-up submittals explained the current limitations of IGCC.

As a follow-up to the materials in the Application, PSGC submitted a National Research Council Review of DOE's Vision 21 Research and Development Program-Phase I, prepared in 2003 ("NRC Report") (INTV Ex. 13).¹² That Report highlighted IGCC's size restrictions (~250 MW), reliability issues (existing plants have taken 3-5 years to reach only 70-80 percent availability, whereas 90 percent is required to be commercially acceptable), and higher costs (\$1,400-2,000/KW compared to \$800/KW for a natural gas plant). *Id.* at 25-26. The review concluded that "commercial-scale coal gasification-based power plants are not competitive with natural gas ... plants at today's relative natural gas and coal prices, nor are they projected to be so by 2015 without significant capital cost reductions." *Id.* at 30.

¹² The NRC Report was submitted to IEPA by PSGC on March 19, 2003 and as Appendix M to the SFA Report dated May 11, 2003. The NRC is part of the National Academy of Science. The members of the committee responsible for the report were chosen for their specific competencies and with regard for appropriate balance. NRC Report (inside front cover) (INTV Ex. 13).

3. IEPA requested additional information as part of the analysis.

IEPA reviewed the October 2002 Application and NRC Report and, in a detailed, five-page, single-spaced letter, requested additional BACT analysis regarding IGCC. Letter from Donald Sutton, IEPA, to Dianna Tickner, PSGC (Mar. 29, 2003) (“Sutton Letter to Tickner”) (INTV Ex. 14). IEPA specifically determined that IGCC qualified as an alternative emission control technique and a technically feasible process under IEPA’s interpretation of the regulations. *Id.* at 1. IEPA requested information on possible reductions of emission rates and the economic, environmental, and energy impacts of IGCC. IEPA further requested thorough backup documentation to allow a fair apples-to-apples comparison of the emissions, reliability, and cost of IGCC and PC boiler technology. *Id.* at 3. IEPA also required information about CO₂ emissions, even though it is not a regulated pollutant under the CAA. *Id.* at 2. Although IEPA recognized the difficulty in making a top-down BACT comparison between IGCC and more traditional, fully demonstrated add-on control technology, the agency required capital and operating cost information on a consistent basis for purposes of comparison. IEPA also requested any information that distinguished the existing IGCC plants from the proposed Prairie State project. *Id.* at 4. In sum, IEPA was fully engaged in the IGCC issue and insisted on a thorough evaluation in PSGC’s BACT analysis.

4. The SFA Pacific Report provided detailed information about IGCCs.

PSGC retained SFA Pacific, a consulting firm which represents the United States Department of Energy (“DOE”) and other government agencies,¹³ to respond to the IEPA information request of March 29, 2003. SFA Pacific prepared a detailed analysis dated May 11,

¹³ See SFA Report, Exhibit B - SFA Pacific Client List at 3-4 (INTV Ex. 15).

2003, titled “Evaluation of IGCC to Supplement BACT Analysis of Planned Prairie State Generating Station” (“SFA Report”) (INTV Ex. 15). The SFA Report (52 pages) and attachments (18) totaled over 300 pages. It provided an overview of IGCC technology, a status report on demonstrated efficiency, reliability and emissions (including criteria pollutants, HAPs and unregulated emissions such as CO₂ and ammonia) and a comparison between that demonstrated performance and Prairie State. The SFA Report also included the detailed, consistent basis cost comparisons requested by IEPA.

Table 4-4 of the SFA Report showed that the permits for the two IGCC plants in operation in the United States, Tampa Electric’s Polk Power Station (“TECO”) and PSE Energy’s Wabash River Plant (“Wabash”), have emission limits that are comparable to or higher than those proposed for Prairie State. *Id.* at Table 4-4 at 23. The fuel for those plants is not high-ash coal, but rather petroleum coke, a low-ash fuel. *See id.* at 22. SFA Pacific noted that “it must be emphasized that there are no demonstrated IGCC performance data for coals similar to Prairie State’s high-ash bituminous coal.” *Id.* at 24. “Moreover, it is questionable that any coal of this ash content would be suitable for an entrained-flow gasification processes — the only ones demonstrated for IGCC thus far.” *Id.* at 2. SFA Pacific also noted that other DOE-funded, coal-based IGCC plants (*e.g.*, SCE Cool Water, LGTI) have failed, have been converted to natural gas or petroleum coke, or otherwise have been shut down. *Id.*, Table 4-1 at 15; *id.* at 16. Still another plant (Piñon Pines) has a variety of operational problems that prevented its commissioning resulting in termination of the project. *Id.*

To comply with the IEPA request to provide a fair comparison, SFA Pacific used projected emissions for a hypothetical IGCC at Prairie State, based on the TECO and Wabash

River IGCC units, and hypothetical removal rates equivalent to those projected at Prairie State.

SFA stated:

Examination of the Table 4-5 data indicates that an ideally performing (steady state, 90% capacity factor and no energy gasification train outages) IGCC can produce lower SO₂, NO_x, CO and PM emissions than the proposed permit levels of the Prairie State PC plant. However, no "ideally performing" IGCC has been demonstrated.

The TECO and Wabash River IGCCs have met their permit limits (Table 4-4).

However, the PC Plant is also expected to meet its proposed limits without difficulty. Over-control of emissions is standard operating procedure. While PCs may produce substantially lower emissions than those in Table 4-5, proposed limits allow the flexibility in operations and environmental control required to over-control with a comfortable margin of safety. Thus, actual PC emissions could be at times lower than the imputed TECO and Wabash River IGCC emission limits.

SFA Report at 24 (INTV Ex. 15). Thus, SFA Pacific found that IGCC, as demonstrated, produces no lower emissions than the proposed pulverized coal technology for Prairie State.

SFA Pacific also provided a detailed comparison of costs for the proposed PC technology and hypothetical IGCC plant for Prairie State. Again, SFA Pacific had to estimate costs for IGCC, because no gasification processes or IGCC systems have been demonstrated on any coals resembling Prairie State's intended fuel (*i.e.*, high-sulfur bituminous coal with high ash content). More telling, the SFA Report states, "SFA Pacific is not aware of any published experimental data or conceptual design studies on gasification process and IGCC performance or economics based on such coals." *Id.* at 32.

The analysis showed that the costs of IGCC do not compare favorably to PC boilers. In fact, no coal-based IGCC plant has been constructed in the United States. Based on work by the Electric Power Research Institute, SFA Pacific developed costs estimates for two hypothetical

IGCC plants (Chevron-Texaco and Global E-Gas technologies) for a 1,500 MW plant, assuming 98 percent SO₂ removal and a 90 percent capacity factor. The resulting analysis concludes that the cost of a hypothetical IGCC unit performing as well as the proposed Prairie State in terms of emissions and reliability would be 30-60 percent higher than the proposed PC technology. *Id.* at 34. SFA Pacific evaluated those higher costs in the context of real world economics and concluded:

Economic penalties of such magnitude would render such IGCC plants non-competitive in the U.S. power market – and hence non-financeable – without firm performance guarantees or other economic incentives (e.g., heavy government support). The impacts are amplified if the IGCC cannot perform at the same annual capacity factors (discussed further later) as the best coal-fired PC plants.

Id.

As noted above, to comply with IEPA's request for a cost comparison of IGCC and PC technologies, SFA Pacific hypothesized that IGCC could have lower emissions than PC boilers despite the lack of any demonstration of such "ideally performing IGCCs." To evaluate this possibility in a top-down format, SFA Pacific calculated the incremental cost of 99 percent SO₂ removal from a theoretical IGCC unit, as compared with the 98 percent SO₂ removal proposed for Prairie State. The results are presented in Table 5-1 and 5-2 of the SFA Report on pages 35 and 39, respectively. In evaluating the cost of removing the incremental one percent SO₂, SFA Pacific concluded:

Because the capital costs of Prairie State coal-based IGCCs and their [cost of electricity] are significantly higher than those of the proposed PC plant, the estimated costs of incremental SO₂ removal are extremely high. The costs are about \$27,000 to \$29,000/ton for SO₂ for the comparison for the PCs with 1500 MW nominal IGCCs.

Id. at 39.

In its site-specific analysis of Prairie State, SFA Pacific concluded that IGCC was not appropriate as BACT. SFA Pacific took into account the size, fuel supply,¹⁴ proposed pollution control train, and comparative economics:

In conclusion, IGCC technology is not BACT for the Prairie State Generating Station due to the high cost of removing sulfur and other regulated emissions. IGCC technology is not cost competitive for commercial deployment at the planned 1,559 MW Prairie State Generating Stations—especially with the high-ash Prairie State coal.

Id. at 44.

5. The Record contains additional supporting information.

SFA Pacific's conclusions are consistent with additional information in the Record. A study by Harvard University concluded that the "overnight" cost (*i.e.*, without considering the cost of capital) of IGCC technology is 20-25 percent higher than PC technology. Rosenberg, *et al.*, "Financing IGCC: A 3 Party Covenant, Energy Technology Innovation Project," Belfer Center for Science and International Affairs Center for Business and Government, John F. Kennedy School of Government, Harvard University (Feb. 2004) at 21 (submitted to IEPA under cover letter from Dianna Tickner, PSGC, to Chris Romaine, IEPA (Mar. 9, 2004) (INTV Ex. 18). The Wisconsin Public Service Commission also determined that IGCC was not cost effective

¹⁴ SFA Pacific noted:

All of the IGCC demonstrations thus far have been on low-ash coals and petroleum coke. There have not been any IGCC demonstrations or published conceptual designs based on similar high-ash coals. The limited published studies of fuel quality impacts on IGCC performance and costs indicate that increasing fuel ash content negatively impacts plant efficiency, feedstock requirements, oxygen requirements, capital costs, and electricity production costs.

Id. at 2.

and rejected an application of Wisconsin Energy Corporation to build such a facility. See Press Release of Public Service Commission of Wisconsin (Oct. 29, 2003) (submitted under cover letter from Brad Fredkin, Burns & McDonnell, to Chris Romaine, IEPA (Oct. 31, 2003)) (INTV Ex. 19).¹⁵

6. IEPA documented its findings after careful analysis.

Petitioners set up their argument by stating “IEPA rejects IGCC as BACT, not because it is not ‘available’ or for reasons of cost, but because it has not [been] demonstrate[d] that coal-based IGCC plants in the US can be privately financed.” Petition at 27. This misstates the breadth of IEPA’s conclusions. The reality is that IEPA required Prairie State to provide substantial additional information so IEPA could study IGCC in great detail and compare it fairly to PC units in the BACT analysis. Sutton Letter to Tickner at 3 (INTV Ex. 14). IEPA reviewed the information in the Record in a manner consistent with the regulatory definition of BACT and a top-down analysis and determined that IGCC was not BACT for seven reasons, many of which by themselves would have been a sufficient basis for rejecting IGCC.

First, IEPA determined that operating IGCC plants have no lower emission limits than pulverized coal plants. RS No. 37 at 19 (INTV Ex. 4) (“Significantly lower emissions are certainly the promise of IGCC technology. *However this has not been demonstrated by the IGCC development projects supported by USDOE.*”¹⁶) (emphasis added). This finding is supported by Table 4-4 of the SFA Report and supporting text and backup documentation, which

¹⁵ Independent of that permitting action, IEPA staff attended a conference presented by the Gasification Technology Institute, a trade association of IGCC vendors, to learn more about the technology from its proponents. Email from Jim Childress, Gasification Technologies Council, to Chris Romaine, IEPA, *et al.* (June 14, 2004, at 7:19 a.m.) (INTV Ex. 16).

¹⁶ Petitioners conveniently omit the critical second sentence twice in their edited quotations on pages 23 and 28 of the Petition.

shows the permit limits of the TECO and Wabash River are comparable or higher for most pollutants than those proposed for Prairie State.

Second, IEPA recognized that IGCC is still a developing technology and is less reliable than a PC Unit. RS No. 29 at 17 (INTV Ex. 4). IEPA found that existing IGCC units operate with less dependability than PC units. *Id.* at 6.

Third, IEPA determined that IGCC has significantly higher costs than a similarly performing PC facility. *Id.* at 6; *id.* at 20, No. 40. Although, IEPA recognized that the reliability of IGCC can be enhanced by adding a second gasifier, “[t]he need for a spare [gasifier] to facilitate enhanced reliability” approaching that of a PC unit imposes significant additional costs. *Id.* IEPA stated that the cost of IGCC units is “at least 20%” higher (based on Harvard Study, which does not include the cost of capital) and the record indicates IGCC could be as much as 30-60 percent higher than pulverized coal technology. *See* SFA Report at 32 (INTV Ex. 15). Because IGCC offers no demonstrated lower emissions but higher costs, IEPA could have rejected IGCC as BACT in the top-down analysis on this basis alone.

Fourth, the agency also recognized that as a developing technology with less reliability and higher cost, IGCC is not “commercially acceptable.” RS No. 37 at 19; No. 40 at 20 (INTV Ex. 4). This means that, because the costs of an IGCC plant are so much higher than its competitors’ costs and thus the market price for electricity, it will sell no electricity, produce no income and, thus, default on its loans. It is economically infeasible, *i.e.*, not commercially acceptable.

Fifth, the purported availability of public subsidies is not a relevant factor in a BACT analysis. *Id.* at 20, No. 39. Like Petitioners, commenters argued that IEPA failed to take into account the availability of government subsidies for IGCC in evaluating whether or not it is

BACT for Prairie State. IEPA correctly responded that the need for such subsidies only confirms the commercially unacceptable risk (in terms of reliability, performance, and cost) of using IGCC for a project like Prairie State. *Id.*

Sixth, while CO₂ sequestration might be possible in the future, it is not feasible now and is not required in any event. *Id.* at 21-22, No. 41.

Seventh, IGCC cannot be required as BACT if doing so would mean the plant would not be built. *Id.* at 22, No. 43. IEPA also stated that it had no authority to delay Prairie State to wait for IGCC to develop into a commercially viable state. *Id.* at 8-9, No. 4.

In sum, the Record show that IEPA thoroughly reviewed IGCC and ultimately rejected it as BACT in a well-reasoned and supported manner.

B. Petitioners' Arguments Do Not Refute IEPA's Reasoned Decision.

Petitioners select a few statements from the IEPA Responsiveness Summary out of context and attempt to spin them into two interrelated arguments. The arguments are convoluted, irrelevant, and otherwise without merit. Petitioners argue: (1) IEPA found that IGCC is "available;" and (2) IEPA improperly used "unachievable financing" as a test in rejecting IGCC as BACT.¹⁷ In making these arguments, Petitioners confuse "technical

¹⁷ Petitioners also repeat, in passing, the argument in the public comments that IEPA must consider the potential of IGCC to control CO₂ emissions. *See* Petition at 28-29. IEPA correctly rejected the comments for two reasons. First CO₂ sequestration has not been proven at IGCC plants. IEPA correctly responded by noting that while "lower CO₂ emissions are one of the benefits hoped for with IGCC technology, ... significantly lower CO₂ emissions have only been achieved with certain IGCC technology using a solid coal feed, rather than a coal slurry. Sequestration is a further refinement on top of IGCC technology that is still being developed with support by the USDOE." RS No. 41 at 21-22 (INTV Ex. 4). Second, IEPA noted that "at this time CO₂ is not a regulated pollutant. Applicable ... standards or requirements have yet to be enacted for CO₂." *Id.* Thus, CO₂ sequestration is irrelevant to a lawful determination of BACT. Petitioners have done nothing to show why these rational conclusions are erroneous.

feasibility” and “economic cost.” They either misunderstand, ignore, or mischaracterize IEPA’s analysis and its basis in the Record. IEPA’s determination considers and applies the definition of BACT and is reasonable and well supported.¹⁸

IEPA stated on several occasions that IGCC is “technically feasible” or “technically available.” Sutton Letter to Tickner at 1 (INTV Ex. 14); RS No. 29 at 17, No. 36 at 19 (INTV Ex. 4). By this, IEPA meant IGCC had sufficient practical potential for application to be further evaluated as BACT. *See In re Three Mountain Power, LLC*, 10 E.A.D. 39, 42 n.3 (EAB 2001). IEPA, however, also determined that IGCC offered no benefit in terms of lower emissions. RS No. 37 at 19 (INTV Ex. 4). This alone would be sufficient to justify selection of PC technology over IGCC as BACT since IGCC ranked no higher than PC technology. *Id.* Nevertheless, IEPA proceeded to evaluate the economic costs of IGCC as required by the definition of BACT. 40 C.F.R. § 52.21(b)(12). In considering IGCC and taking into account the status of IGCC’s performance in terms of reliability and associated costs as applied to the site-specifics of Prairie State, IEPA concluded:

The Illinois EPA has examined the status of IGCC technology at the present time. While various claims have been made that the technology is available for the proposed plant, they do not survive close scrutiny. While IGCC is expected to be the next generation of technology for coal-fired power plants and has been demonstrated by several projects supported by the United States Department of Energy (USDOE), it is still a developing technology that is not yet fully mature. IGCC technology is significantly more expensive and has not demonstrated the same level of dependability as traditional boiler technology. These factors are obstacles to commercial acceptance, i.e., financing, of the proposed plant with IGCC technology. It is not appropriate for the

¹⁸ To the extent Petitioners claim that IEPA failed to follow a rigid “top-down” BACT analysis, Board precedent makes it clear that permitting authorities are not required to follow a “top-down” BACT analysis in order to establish BACT limits. *See e.g., Steel Dynamics*, 9 E.A.D. at 183 (“The top down analysis is not mandatory methodology.”).

permit to require use of a technology by the proposed plant that is not yet sufficiently developed to be commercially accepted.

RS at 6 (INTV Ex. 4). While IEPA uses the term “commercial acceptance” (*i.e.*, financing), its determination is rooted in economic costs. Commercial acceptance is simply a measure of the commercial availability and economic feasibility of the project, both of which are an accepted part of the top-down analysis. *See Steel Dynamics*, 9 E.A.D. at 202.

Petitioners argue that “IEPA twists the analysis required by BACT, which requires that ‘costs’ associated with a project be taken into account, *see* 40 C.F.R. § 52.21(b)(12), into an analysis of whether financing is available for a particular project,” which “is an error as a matter of law.” Petition at 27. By focusing on IEPA’s statements regarding financing and ignoring the agency’s statements regarding cost, it is Petitioners who contort IEPA’s analysis. IEPA makes clear that not only have IGCC development projects had comparable or higher emissions rates to those projected for Prairie State (RS No. 37 at 19 (INTV Ex. 4)), IGCC would also have costs significantly higher than the proposed PC plant (at least 20 percent higher). *Id.* at 20, No. 40. IEPA stated that economic impact is the crucial aspect of IGCC technology that IEPA relied on in rejecting it. *Id.* at 19, No. 37. IEPA goes on to explain in response to other comments the connection between higher costs and the inability to obtain financing (*i.e.*, that project risk — emissions performance, reliability and *cost* — is a critical factor in *obtaining financing* for IGCC). *Id.* at 20, Nos. 39-40. It is only Petitioners who fail to understand that inter-relationship.

Petitioners also assert that IEPA’s analysis is “circular” “because it assumes financing is unavailable for IGCC.” Petition at 28. Contrary to Petitioners’ assertion, IEPA’s analysis is linear, well reasoned, and supported by the Record. It reflects statements in the SFA Pacific Report, Harvard Report, and NRC Report that the cost of a hypothetical IGCC plant is significantly higher than a comparable PC unit proposed for Prairie State. SFA Pacific states that

there is no market (*i.e.*, revenue) for power from a project with such a cost disadvantage. *See* SFA Report at 34 (INTV Ex. 15). IEPA then concurs with SFA Pacific that there will be no financing available for such a project. RS No. 39 at 20 (INTV Ex. 4).

Indeed, it is Petitioners who make the circular argument by suggesting a state's pronouncement that IGCC is BACT will necessarily make private investors more interested:

Put differently, the appropriate question here is whether an IGCC version of Peabody's proposal could attract adequate investment if Illinois and/or the EAB effectively place the *conventional coal* combustion technology off limits in Illinois – and in serious doubt elsewhere – by declaring IGCC to be BACT for a coal power plant running on Illinois coal.

Petition at 29 (emphasis in original). In effect, Petitioners argue that IEPA should have used the BACT analysis to ban conventional technology in favor of technology under development — make IGCC BACT so it will become BACT. This ignores two fundamental principals of BACT. First, BACT is not a specific technology; it is an emission limit or a work practice. 40 C.F.R. § 52.21(b)(12). Second, BACT is a case-by-case analysis. *Id.*; *In re BP Cherry Point*, PSD Appeal No. 05-01, slip op. at 31-32 (EAB June 21, 2005).

As to the latter point, IEPA was careful to apply the definition of BACT faithfully by analyzing IGCC in terms of “the proposed plant.” This proper approach recognizes the finding of SFA Pacific that no IGCC plants are operating on bituminous coal, much less a high-sulfur, high-ash coal.¹⁹ Comments submitted by the United Mine Workers (cited favorably by

¹⁹ Petitioners point to several projects that have been announced conceptually since the close of the public comment period. *See, e.g.*, Petition at 24 (Steelhead application). IEPA distinguished some of these by stating that they were “special” or “exceptional” because they are being developed to demonstrate IGCC technology and that they would have backup natural gas to supplement the gasifier to bolster reliability. RS No. 40 at 20 (INTV Ex. 4). This analysis is not clearly erroneous, especially in light of the overwhelming evidence of cost disadvantages of IGCC for Prairie State.

Petitioners with respect to other claims) make it clear that Prairie State would be a particularly bad project for forcing IGCC technology. The comments recognize that an IGCC plant the size of Prairie State (1,500 MW) would require six trains of 250 MW, each composed of four sequential technologies (air separator, gasifier, gas cleanup, and combined cycle). The comments also recognize that none of this equipment could, by itself, much less together, reach the 90 percent reliability required for a base load plant. The comment states then succinctly: “A six train IGCC is too large a jump to expect anything better than a technological and operational embarrassment.” Comment of Dr. Bradley C. Paul on behalf of the United Mine Workers of America at 3 (June 18, 2004) (INTV Ex. 21) (Pet. Ex. 50). Dr. Paul concludes:

[I]n conclusion then, it is my suggestion to the agency that this plant is the wrong place for a bold new definition of BACT and forcing of IGCC. It is very unlikely that a permit condition on IGCC technology would result in a project that Peabody could put together financially. If financial hurdles were cleared[,] the operational problems that would result from such a large leap in equipment scale-up or multiplicity of trains would be an embarrassment to IGCC technology that would steer people away from rather than toward the future. Please pick a project in the 500 megawatt range before giving serious consideration to forcing IGCC technology.

Id.

Consistent with a case-by-case analysis, IEPA agreed that “the proposed plant is not the right place for forcing IGCC technology.” RS No. 44 at 22 (INTV Ex. 4).

Moreover, IEPA followed the law by refusing to defer a decision on Prairie State until IGCC becomes commercially available:

The continuing development of clean coal technology does not provide a legal basis to refuse to issue a permit for the proposed plant. Applications for proposed plants must be reviewed based on current regulations and circumstances. The Illinois EPA is not allowed to nor is it capable of predicting what future regulations will require or when new control technology will become viable and what it will achieve. While the Illinois EPA is optimistic that

IGCC will become financially viable for power generation in the not too distant future, experience with the development of IGCC technology, as it has been occurring over the last 15 years or more, suggests that it could also take much longer.

Id. at 8-9, No. 4; *see also id.* at 22, No. 43 (“For purposes of BACT, a permitting authority does not have the legal right to require that a proposed plant use a technology like IGCC technology, which, while technically feasible, is also still developing, if doing so would mean that the proposed plant could not be built.”).

In sum, IEPA’s analyses and conclusions rejecting IGCC as BACT for Prairie State considered and appropriately applied all regulatory criteria, were not clear error, do not merit further review, and should be upheld.

V. IEPA DID NOT ERR IN REJECTING THE USE OF LOW-SULFUR COAL.

Petitioners allege that IEPA erred by failing to “adequately consider low-sulfur coal as a pollution control option in its top-down BACT analysis.” Petition at 31. In support of this argument, Petitioners vigorously assert that IEPA did not undertake a “responsive” BACT analysis (*id.* at 33-34); that the finding that low-sulfur coal is not cost-effective is “unsupported by the record” (*id.* at 35-36); that the availability of local coal reserves is “irrelevant” to a BACT determination (*id.* at 36); that the use of scrubbers “does not excuse the evaluation of clean fuels” (*id.* at 36-37); that IEPA “rejected using non-local coal without adequate evaluation” (*id.* at 37-38); and that the “future cost of low sulfur coal” is “irrelevant” to a BACT analysis (*id.* at 38-39). All of Petitioners’ assertions fail because they all stem from the same fundamentally false premise – that, in establishing BACT for Prairie State, IEPA was required to evaluate a power plant other than that which PSGC proposed, a mine-mouth facility designed specifically to burn a particular locally-available coal. Moreover, IEPA addressed Petitioners’ claims in its Responsiveness Summary and Petitioners have failed to show that those responses were clearly erroneous.

A. The Use of Local Coal is Integral to Prairie State.

PSGC was very clear in its Application that the proposed plant, including its emission control equipment, was designed specifically to burn a local high-sulfur Illinois No. 5 or No. 6 seam coal that will be delivered from a nearby mine (the “Mine”) to the plant via conveyor belt.²⁰ The Mine supplying the coal and the proposed power plant were being permitted as a

²⁰ The cover letter for the October 2002 Permit Application stated that “[t]he suite of planned environmental controls for Prairie State reflect the culmination of years of research that will result in some of the lowest emission rates in the country while using high sulfur coal.” Letter from Kelly to Sutton at 2 (INTV Ex. 6).

single source in the Application. Permit Application at 2-5 (INTV Ex. 6). Consequently, the Mine emission sources were included in the Application. *See id.* at App. B, Attachment B-1 Supporting Emission Data; Particulate Emissions Sources (Mine Slope Conveyor Loadout; Breaker Loadout Bin). The Mine's emissions were included in the air quality modeling. *Id.* The Permit Application proposed BACT for the Mine, as well as the plant. *Id.* at App. C, C-5. The Application also contained specific coal quality data for the plant's design basis. *Id.* at App. B, Attachment B-1. Moreover, PSGC relied in part on information from vendors as to what levels would be guaranteed for the specific coal. *See, e.g.,* Letter from Charles Barringer, Alstom (Sept. 26, 2002) (INTV Ex. 23).

The Application also specifically addressed fuel selection:

As previously indicated, PSGS is designed as a mine-mouth facility. The PC Boilers are designed to fire Illinois-Herrin #6 coal from Prairie State Mine and to use natural gas fuel for start-up. PSGS has 240 million tons of #6 coal dedicated for its use. PSGS is expected to burn approximately 6.5 to 6.9 million tons annually based on a 85% to 90% capacity factor per year.

Illinois has some of the most significant coal reserves in the United States (in excess of 105 billion tons). Two coal seams, the Springfield #5 and Herrin #6, account for the majority of this resource. In Washington County alone, the recoverable resources are 3,681 million tons.[] In the unlikely event additional coal is required over the life of the facility, the recoverable reserves in Washington and surrounding counties (9,133 million tons) are available and are well within the design basis for PSGS.[]

Id. at App. C, C-15 (footnotes omitted).

PSGC also addressed why low-sulfur coal was not being used:

The alternative to using this coal is to obtain lower-sulfur coal from other regions of the country or abroad, which has its own environmental impacts associated with the transportation and storage of the coal. However, as demonstrated in this application, the post combustion technology for PC Boilers has advanced to the point where it is now practical, economical and environmentally prudent to utilize Illinois coal.

Id. at App. C, C-17. Furthermore, IEPA found that Prairie State is a mine-mouth plant in

Condition 1.3 of the Permit. As IEPA stated in its Technical Review for the project:

The Illinois EPA also broadly considered the coal supply selected for the plant, as most existing plants in Illinois import low-sulfur western coal, rather than use local coal. However, the selected coal supply is an inherent part of the project, as the plant will be developed and operate as a mine-mouth except as noted above. In addition, the plant would be specifically developed to appropriately control emissions of the selected coal supply.

IEPA Calculation Sheet at 4 (April 27, 2005) (INTV Ex. 3).

Indeed, Petitioners refer to an article in their comments recognizing that the coal inherently defines the design of the plant. See Babcock & Wilcox, “How Low Can You Go?” (Aug. 2001) (article submitted in response to Phyllis Fox’s comments on behalf of Sierra Club, indicating that power plants for eastern bituminous and Powder River Basin coal are fundamentally different) (INTV Ex. 39); see RS 331 at 158 (INTV Ex. 4) (boilers designed to burn high sulfur coal cannot burn low sulfur coal without making adjustments). Other regulators have recognized that it would not be appropriate to compare BACT limits for low sulfur sub-bituminous coal with units that burn a high sulfur bituminous coal because “coal characteristics will affect the BACT levels for many contaminants.” Email from Erik Hendrickson, Texas Commission on Environmental Quality (“TCEQ”), to Shashi Shah, IEPA (Dec. 2, 2004, 3:12 p.m.) (“Hendrickson email”) (INTV Ex. 24). Thus, IEPA determined that at a mine-mouth plant, the mine (and its coal), and the plant are one project:

The development of a mine-mouth power plant is an intrinsic aspect of the proposed plant, which would be developed to use a specific reserve of fuel, which is adequate for the expected life of the plant. Because of the selection of fuel, the air emission control equipment for the proposed plant must be designed to handle emissions from combustion of unwashed high sulfur, high ash coal and be very efficient, including a wet scrubbing system that must be operated to achieve an SO₂ removal efficiency of at least 98 percent.

RS No. 52 at 25 (INTV Ex. 4). IEPA imposed this 98 percent removal on SO₂ as a BACT requirement. Permit Condition 2.1.2.b.ii.B (INTV Ex. 1).

B. BACT Does Not Redefine the Project.

The long-standing policy of EPA, as repeatedly confirmed by this Board, is that the process for determining BACT is “not a means to redefine the design of the source when considering available control alternatives.” *See, e.g.*, New Source Review Workshop Manual at B.13 (Oct. 1990) (draft) (“Draft NSR Manual”) (INTV Ex. 22). This policy is consistent with the plain language of the CAA itself, which provides that a major emitting facility may not be constructed unless, among other things, the “*proposed facility* is subject to the best available control technology for each pollution ... from *such facility*.” CAA § 165(a)(4) (emphasis added). In turn, the PSD regulations define “best available control technology” to mean, as relevant here:

[an] emissions limitation ... based on the maximum degree of reduction for each pollution subject to regulation under [the] Act which would be emitted from any *proposed* major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for *such source* or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

40 C.F.R. § 52.21(b)(12) (emphasis added). In other words, as a general proposition, the BACT process is intended to determine the appropriate emissions limitations for the source that the applicant is proposing to build. It is not normally an opportunity for the permitting authority (or those opposed to the applicant’s plans) to dictate that the applicant build something different from what has been proposed.

The CAA allows states to consider alternatives, but it does not require states to consider them. Indeed, EPA acknowledges that “this is an aspect of the PSD permitting process in which

states have the discretion to engage in a broader analysis *if they so desire*.” Draft NSR Manual at B.13 (emphasis added) (INTV Ex. 22). For instance, EPA has observed, “there may be instances where, *in the permit authority’s judgment*, the consideration of alternative production processes is warranted and appropriate for consideration in the BACT analysis.” *Id.* (emphasis added).

IEPA, in rejecting comments that it was required to engage in a full-blown analysis of the use of lower-sulfur coal, or coal-blends at Prairie State, correctly determined that such alternatives would result in the project being “redefined,” contrary to EPA policy. For instance, IEPA stated that the “project that must be addressed when evaluating BACT is the project for which an application has been submitted, i.e., a proposed mine-mouth power plant.” RS No. 46 at 23 (INTV Ex. 4). The agency continued that the “source of coal for which the plant would be developed is a specific reserve of 240 million tons of recoverable coal, which would meet the needs of the proposed plant for more than 30 years.” *Id.* “Accordingly,” the IEPA found, the “use of a particular coal supply is an inherent aspect of the proposed project,” and to “require an evaluation of an alternative coal supply ... would constitute a fundamental change to the project.” *Id.*²¹ In response to comments suggesting that Prairie State would have lower emissions if it burned lower sulfur coal, IEPA stated:

²¹ Elsewhere, responding to a similar comment that the BACT analysis for Prairie State did not reflect BACT because it “failed to consider fuel like natural gas or low-sulfur coal, which would lessen the plant’s impacts on air quality,” IEPA reiterated that the “development of a mine-mouth power plant is an intrinsic aspect of the proposed plant, which would be developed to use a specific reserve of fuel, which is adequate for the expected life of the plant.” RS No. 52 at 25 (INTV Ex. 4). IEPA continued by noting that, “[b]ecause of the selection of fuel, the air emission control equipment for the proposed plant must be designed to handle emissions from combustion of unwashed high sulfur, high ash coal and be very efficient, including a wet scrubbing system that must be operated to achieve an SO₂ removal efficiency of at least 98 percent.” *Id.*

The BACT determination contains an emission limit for SO₂, 98 percent reduction, that directly represents the maximum degree of reduction in emissions that is achievable for the proposed plant, as determined by the Illinois EPA. The data compiled by the National Park Service from the Harrison plant, which showed that SO₂ control efficiency greater than 98 percent was achieved in practice in certain calendar years, helped contribute to the Illinois EPA's decision to include a limit for SO₂ control efficiency in the permit.

Moreover, the comment ignores the obvious implications that would arise from a BACT evaluation that mandated consideration of low-sulfur coal for a high-sulfur coal, mine-mouth power plant. This would, in essence, turn the fundamental nature of the project on its head.

Id. at 52, No. 109.

C. Petitioners Fail to Demonstrate IEPA Was Clearly Erroneous.

None of Petitioners' arguments establish that IEPA's determination in this regard was "clearly erroneous." Indeed, in their totality, those arguments amount to little more than a generalized objection to the EPA policy that BACT is not a means to "redefine" a source. Petitioners protest that, "[t]aken to its logical conclusion," IEPA's view of that policy would "allow a permit applicant to avoid all BACT review by including its preferred fuel, add-on controls, and other pollution controls and hide behind the claim that requiring anything different would unlawfully 'redefine' the proposed source." Petition at 32. It is not necessary, however, for this Board to indulge Petitioners because it is plainly absurd to suggest that PSGC has somehow attempted to "avoid all BACT review" of its proposed new facility. The design coal from the co-permitted Mine was at the heart of the BACT analysis. Petitioners have identified nothing that demonstrates that IEPA erred when it determined it would not redefine the source by requiring different fuel.

EPA's position that, under the CAA and its own regulations, the BACT process should not be implemented so as to "redefine the source" is not only long-standing, but has been

accepted at the highest levels of the Agency. For instance, the EPA Administrator has stated that:

[p]ermit conditions are imposed for the purpose of ensuring that the proposed source ... uses emission control systems that represent BACT.... These control systems, as stated in the definition of BACT, may require application of "production processes and available methods, systems, and techniques" to control emissions.... The permit conditions that define these systems are imposed on the source *as the applicant has defined it*.... The conditions themselves are not intended to redefine the source.

In re Pennsauken County, NJ Res. Recovery Facility, 2 E.A.D. 667, 1988 EPA App. LEXIS 27, *13 (Adm'r 1988) (emphasis added). Similarly, the EPA Administrator previously acknowledged that it will not require a PSD applicant to "change the fundamental scope of its project" in reviewing available control technologies. *In re Spokane Reg'l Waste-to-Energy*, PSD Appeal, No. 88-12 at 5 n.7 (Adm'r 1989). Moreover, the IEPA is in a position to understand how available natural resources shape a project's fundamental scope. *See Alaska Dep't of Envtl. Conservation v. EPA*, 540 U.S. 461, 488 (2004) ("Understandably, Congress entrusted state permitting authorities with initial responsibility to make BACT determinations 'case-by-case,' § 7479(3). A state agency, no doubt, is best positioned to adjust for local differences in raw materials or plant configurations, differences that might make a technology 'unavailable' in a particular area.").

In *Hawaiian Commercial & Sugar Co.*, this Board took explicit note of EPA's "redefinition" policy, quoting directly from the Draft NSR Manual. *In re Hawaiian Commercial & Sugar Co. Permit*, 4 E.A.D. 95, 99 (EAB 1992). The Board rejected a claim that, as part of the BACT permit process, the permit applicant for a coal-fired facility should be required to install a combined cycle facility fueled with low sulfur distillate or residual oil and to equip the facility with selective catalytic reduction for NO_x control. In doing so, the Board also

determined that requiring the petitioner's "preference as to the type of boiler *and fuel to be used* ... would in effect redefine the source," which the BACT requirements did not require. *Id.* at 100 (emphasis added). Because the BACT process necessarily involves a site-specific, case-by-case determination, it follows that the consideration of alternative fuel types has been found to "redefine the source" in these other circumstances.

Petitioners invoke other decisions by this Board which they construe as supporting their contention that the IEPA should have undertaken an analysis of the alternative use of low-sulfur coal and coal blends at Prairie State. *See* Petition at 33. As IEPA noted in the Responsiveness Summary, none of the cases Petitioners cite involved a project in which the proposed plant was a mine-mouth facility — much less where the mine is co-permitted with the power plant and designed to meet BACT limits for that specific fuel:

Closer review of these EAB decisions show that they do not address the circumstances presented by the proposed plant. In particular, neither Hawaii or New York have local coal reserves. For the projects in those states, the planned fuel supply for the proposed project was not an intrinsic aspect of the project. Instead, the selection of the planned fuel supply for the proposed plant involved a business decision by the source considering potential fuel supplies, all of which would have to be transported substantial distances to the proposed plant. In addition, the plants were not subject to stringent requirements for SO₂ scrubbing, as set for the proposed plant. A series of EAB cases support the approach being taken to the fuel supply at the proposed plant. These cases support the principle that a permitting authority should consider BACT for the project for which an application has been submitted and not "re-define the source."

RS No. 47 at 24 (INTV Ex. 4).

Petitioners cite to *Inter-Power* (the plant in New York mentioned by IEPA), which involved a non-mine mouth plant in which the applicant's review of the cost effectiveness of a variety of available fuels from across the country was upheld by the Board. Petitioners also cite *Old Dominion*, also involving a non-mine mouth plant in which the issue was whether or not the

BACT analysis must consider natural gas as an alternative to coal. The Administrator rejected that claim:

The State did not feel it was authorized to “redefine the source” *i.e.*, to alter the fundamental scope of the project since Old Dominion had previously considered the alternative of using gas turbines to power the facility, but ultimately rejected that approach because of higher capital cost, low unit efficiency, and the unavailability of natural gas in the Clover area. No clear error is apparent in the State’s handling of this matter, although EPA does not view the new statutory language as being limited to instances where an applicable NAAQS or increment is at risk. Rather, EPA construes the 1990 Amendments as conferring discretion on the permit issuer to consider clean fuels other than those proposed by the permit applicant.

In re Old Dominion Elec. Coop., 3 E.A.D. 779, 1992 EPA App. LEXIS 37, *31 (Adm’r 1992).

Petitioners cite to a footnote that says “[h]owever, the BACT analysis should include consideration of cleaner forms of the fuel proposed by the source.” *Id.* n.39. PSGC and IEPA considered and rejected coal washing because the required add-on emission control equipment made that cleaner form of fuel redundant. *See infra* Section IX. The same logic applies to low sulfur coal. Finally, Petitioners cite *Hibbing Taconite*, a case in which the plant sought to switch fuel from natural gas to residual petroleum coke. The Administrator found that it would not redefine the project to require the applicant to continue burning natural gas. *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 1989 EPA App. LEXIS 24, *10 (Adm’r 1989). None of those three fact patterns is controlling for a mine-mouth facility like Prairie State.

The issue here is whether the use of coal from the co-located mine at the Prairie State site represents such an inherent element of the overall project that to require consideration of the use of coals from other sources would fundamentally change the basic nature and economic viability of the project itself. IEPA determined that such was the case. Petitioners have not shown how

that determination is “clearly erroneous,” either because it was contrary to law or constituted an abuse of discretion. Therefore, as to this issue, the Petition should be denied.

D. IEPA Analyzed And Rejected Low Sulfur Coal as BACT.

Petitioners claim that IEPA failed to perform any analysis of the use of low sulfur coal as a component of BACT. In response to comments, and in addition to finding that requiring the use of low sulfur coal would “turn the fundamental nature of the project on its head,” IEPA analyzed the appropriateness of requiring the use of low sulfur coal in terms of its environmental, energy, and economic impacts. IEPA determined that 98 percent SO₂ removal, regardless of sulfur content, was BACT for Prairie State. This is based, in part, on the same information submitted by Petitioners. *See, e.g.*, RS No. 114 at 54, No. 116 at 55 (INTV Ex. 4).

BACT is not the lowest emission rate, rather, it is “an emission limit ... based on the maximum reduction of each pollutant...” 40 C.F.R. § 52.21(b)(12). Petitioners submitted information in comments suggesting that low sulfur coal results in a removal rate lower than 98 percent. In its responses, IEPA pointed out that low sulfur coal may result in lower emission limits, but did not represent the maximum reduction rate:

The SO₂ limits pointed to in these comments are limits expressed in lb/mmBtu. They do not reflect more efficient control of SO₂ emissions, but rather depict use of a coal supply containing less sulfur. The efficiency of SO₂ control underlying these limits, as also provided with the comments, ranges from 90 percent to 96.25 percent. For example, the Deseret plant in Utah with a limit of 0.10 lb/mmBtu, is using a local Western Colorado coal that contains only about 1.0 lb SO₂/mmBtu equivalent and is only required to scrub with about 90 percent efficiency. The limit for the Longview plant was originally set at 0.12 lb SO₂/mmBtu, based upon 97 percent control of emissions. Even after being lowered to 0.095 lb/mmBtu pursuant to a consent order, the limit for Longview only reflects 97.625 percent control of SO₂ emissions.

RS No. 122 at 56-57 (INTV Ex. 4). IEPA noted 98 percent is the maximum demonstrated reduction of SO₂ and is BACT. *Id.* at 52-55, Nos. 109-10, 114-16.

Similarly, Petitioners cite to a report from Matt Haber of EPA suggesting that limits of 0.095 lb based on 95 percent scrubbing and the use of 0.6 percent sulfur. For reasons described with respect to NO_x BACT in Section XIX, Mr. Haber's position is merely EPA's litigation position. However, IEPA pointed out that "[a]s noted by the comment itself, the control efficiency recommended by Mr. Haber for the scrubbers is only 95 percent, substantially lower than the 98 percent control efficiency being required for the boilers at the proposed plant." *Id.* at 56, No. 121.

IEPA also recognized other factors that are part of a proper BACT analysis. It noted the environmental benefits of the proposed mine-mouth arrangements of a well controlled plant compared to the use of low sulfur coal from distant mines:

Prairie State has identified a number of advantages that accrue to the environment from a mine-mouth power plant, including reduced impacts from transportation of coal, as compared to use of another coal supply. The Illinois EPA has broadly considered the use of alternative coal supplies for the proposed plant as suggested by this comment. The Illinois EPA concludes that the impacts of using a non-local coal are excessive if the emissions from the local coal supply can be appropriately controlled.

Id. at 23, No. 46.

IEPA also considered the economic costs of using low sulfur coal at Prairie State.

The price and value of western coal has increased substantially in recent years, both as demand has increased and as the cost of crude oil, which is the source of the diesel fuel used in the trains that transport coal, has risen. The wide-spread use of western low-sulfur coal in Illinois is a consequence of the lack of scrubbers on Illinois' existing coal-fired power plants. It is not directly relevant to the need to evaluate use of alternative fuels for the proposed plant, which would and must be equipped with a high-efficiency scrubber for SO₂. It also does not show that it would be cost-effective to use such coal at the proposed plant.

Id. IEPA explained that use of low sulfur coal at existing plants was in essence subsidized by the savings gained avoiding the cost of the scrubbers required at Prairie State:

While the use of western low-sulfur coal at existing power plants generally shows that it is an available fuel, it does not show that its use would be cost-effective at the proposed plant. In this regard, the cost of using western coal at those existing plants reflects a business decision that is, in part, facilitated because such plants are not required to have SO₂ scrubbers by applicable regulations.

Id. at 24, No. 48.

In sum, IEPA's decision was reasonable. IEPA recognized that it should not use BACT to redefine the fundamental nature of the proposed project, and it had substantial evidence in the Record justifying the use of coal from the co-permitted Mine. IEPA broadly considered low sulfur coal and determined it was not BACT. Petitioners have demonstrated no clear error.

VI. IEPA AND PSGC DEMONSTRATED EMISSIONS FROM PRAIRIE STATE WILL NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE 8-HOUR OZONE AND PM_{2.5} NAAQS.

Petitioners argue that the Permit should be remanded because PSGC failed to demonstrate that Prairie State will not cause or contribute to a violation of either the 8-hour ozone NAAQS or the PM_{2.5} NAAQS as required by CAA § 165(a)(3) and 40 C.F.R. § 52.21(k). This argument is factually and legally flawed. Demonstrating compliance with the NAAQS by means of an ambient air quality analysis is one of the core requirements of the PSD regulations. *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 247 (EAD 1999); *accord In re Hawaii Elec. Light Co.*, 8 E.A.D. 66, 73 (EAB 1999). The requisite ambient air quality analyses were performed and demonstrated that emissions from Prairie State will not cause or contribute to any violations. Petitioners have not shown that these analyses were clearly erroneous. Petitioners merely repeat their comments and do not attempt to address IEPA's response. Therefore, the Board should deny review of this claim.

A. Prairie State Will Not Cause or Contribute to an Exceedance of the 8-hour Ozone NAAQS.

Petitioners' argument that there is no demonstration of compliance with the 8-hour ozone NAAQS, particularly for the St. Louis nonattainment area, ignores the evidence in the Record and the regulations. As described in the Responsiveness Summary, IEPA performed the ambient air quality analysis modeling to demonstrate compliance with the ozone NAAQS.²² RS No. 294 at 133-34 (INTV Ex. 4). The primary focus of the modeling was demonstration of compliance with the 1-hour NAAQS. But as IEPA explains, the 1-hour modeling can and was used to assess

²² Because of the complexity of photochemical grid models and input needed, IEPA conducted the ozone analysis to predict the impacts of numerous power plants, including Prairie State. RS No. 293 at 133 (INTV Ex. 4); *see also* 40 C.F.R. Part 51, App. W § 8.2.6(b).

the impact of Prairie State emissions on the 8-hour NAAQS, in a conservative manner. *Id.* (stating that the use of the 1-hour “modeling is very conservative, overstating the identified changes in ozone levels, as they reflect 1-hour impacts, rather than 8-hour average impacts”).

Petitioners have offered no evidence to suggest that the 1-hour modeling cannot be used in that manner, or that IEPA committed clear error in using the 1-hour modeling. In fact, they have not even acknowledged the 1-hour modeling in this context. Moreover, IEPA’s use of the 1-hour modeling to assess the impact on the 8-hour standard was consistent with EPA Region V’s guidance to IEPA. *Id.* Petitioners likewise have not addressed Region V’s guidance or explained why it was error for IEPA to rely upon it. Instead, Petitioners cite CAA § 165, EPA’s proposed rule to implement the 8-hour standard and a letter from EPA Region V to the Indiana Department of Environmental Management for support. Petition at 41. Yet, Petitioners have not shown how the analysis conducted by IEPA is inconsistent with EPA’s position in those documents. Based on its analysis, IEPA reasonably concluded that emissions from Prairie State would not cause or contribute significantly to a NAAQS violation. RS No. 294 at 133-34 (INTV Ex. 4).

Further, Petitioners’ argument that PSGC failed to demonstrate that the air quality in the St. Louis nonattainment area will be protected misinterprets or ignores the regulations. Prairie State is located in an attainment area for ozone and 40 C.F.R. Part 51, Appendix S § III allows states to presume that a source outside of a designated nonattainment area will have no significant impact on that area. In its June 2003 proposed rule for implementing the 8-hour NAAQS, EPA referred to Appendix S in its response to a question regarding what a state would be required to do to assure that a new source does not cause or contribute to a violation:

5. Will a State be required to assure that the increased emissions from a new major source do not cause or contribute to a violation

in a nearby nonattainment area before it issues a preconstruction permit under appendix S?

At the current time, *EPA allows the State to presume that a source locating outside a designated ozone nonattainment area will have no significant impact on the designated nonattainment area.* See section III of appendix S. However, given the recent advances in the scientific understanding of ozone formation, we may revise these guidelines in the near future. In the meantime, under the PSD rules, States may choose to address the impacts of sources in attainment areas on nearby nonattainment areas in a more proactive manner; i.e., through PSD offsets and/or tighter emission controls when the source is shown to contribute to a violation of the NAAQS.

68 Fed. Reg. 32802, 32848 (June 2, 2003) (Proposed Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standards) (emphasis added).²³ EPA has yet to revise these guidelines. Therefore, even without the modeling, it would have been acceptable for IEPA to presume that Prairie State will have no impact on the St. Louis/East St. Louis nonattainment area.

The 1-hour ozone modeling and the 8-hour assessment based on that 1-hour modeling performed by IEPA, along with the presumption in Appendix S, more than satisfies the CAA requirement for demonstrating that Prairie State will not cause or contribute to a violation of the ozone 8-hour NAAQS. Petitioners have failed to show otherwise and review should be denied. *See Teck Cominco Alaska*, slip op. at 22 (permitting agency due deference on technical issues).

²³ Because the requirements of Appendix S apply to nonattainment areas, where air quality is worse than PSD areas, it would be irrational for EPA to allow a presumption of “no significant impact” in the context of nonattainment implementation but not in PSD. Indeed, EPA’s answer in the proposed rule indicates that it does not make such a distinction.

B. Prairie State Will Not Cause or Contribute to an Exceedance of the PM_{2.5} NAAQS.

IEPA considered the PM₁₀ modeling and performed additional analyses to determine that emissions from Prairie State will not cause or contribute to a violation of the PM_{2.5} NAAQS. RS No. 260 at 116-17, No. 351 at 166-67. In their argument that there is no demonstration of protection of the PM_{2.5} NAAQS, Petitioners ignore IEPA's analysis and response to comments. Petitioners have failed to show that IEPA's determination is clearly erroneous. Accordingly, review should be denied.

PSGC and IEPA used the PM₁₀ modeling as a surrogate for PM_{2.5} and concluded that emissions from Prairie State would not cause or contribute to an exceedance of the NAAQS.²⁴ Their actions are consistent with EPA's interim guidance:

In view of the significant technical difficulties that now exist with respect to PM_{2.5} monitoring, emissions estimation, and modeling (described below), EPA believes that PM₁₀ may properly be used *as a surrogate* for PM_{2.5} in meeting NSR requirements until these difficulties are resolved.

* * *

When the technical difficulties are resolved, EPA *will amend the PSD regulations* under 40 CFR 51.166 and 52.21 to establish a PM_{2.5} significant emissions rate, and EPA will also promulgate other appropriate regulatory measures pertinent to PM_{2.5} and its precursors.

²⁴ It is worth noting that IEPA relied on extremely conservative modeling in reaching its conclusions. PSGC performed the PM modeling assuming total particulate matter emissions of 0.05 lb/mmBtu, to account for the uncertainty in condensable emissions, which are primarily PM_{2.5}. The Permit restricts total PM emissions to 0.035 lb/mmBtu with the potential to go as low as 0.018 lb/mmBtu. Permit Condition 2.1.17 (JNTV Ex. 1). Also, AP-42, Table 1.1-6 indicates that only 29 percent of the PM emissions with an ESP are PM_{2.5} or smaller. Even at 0.05 lb/mmBtu, emissions from Prairie State will not cause or contribute to a violation of the PM NAAQS.

Memorandum from John S. Seitz, Director, Office of Air Quality Planning & Standards (MD-10), "Interim Implementation of New Source Review Requirements for PM_{2.5}," (Oct. 21, 1997) (emphasis added) (INTV Ex. 25).²⁵ EPA has yet to amend 40 C.F.R. § 51.166 or § 52.21. Thus, it was appropriate for IEPA to use PM₁₀ as a surrogate for PM_{2.5} in concluding that Prairie State will not cause or contribute to a violation of NAAQS. Petitioners have not even addressed the EPA interim guidance, much less explained how IEPA could have erred in relying upon it.

Although the use of PM₁₀ as a surrogate is sufficient to demonstrate compliance with the PM_{2.5} NAAQS under EPA guidance, IEPA went further. IEPA compared the PM emissions from Prairie State along with PM_{2.5} monitoring data from the ambient air quality monitoring station at the Baldwin site to the PM_{2.5} standards. As illustrated in the Responsiveness Summary, at the permitted PM₁₀ emission rate of 0.035 lb/mmBtu, assuming it is all PM_{2.5}, the predicted concentrations from Prairie State alone are less than the PM₁₀ Significant Impact Level ("SIL").²⁶ RS No. 351 at 166-67 (INTV Ex. 4). When the data from Baldwin is included, the predicted concentrations are still less than the standards. *Id.*

IEPA also required additional measures in the Permit to provide further comfort that emissions from Prairie State will not cause or contribute to a violation of the PM_{2.5} NAAQS. IEPA is requiring that Prairie State install and operate a PM_{2.5} monitor (or, in the alternative,

²⁵ As IEPA points out, PM_{2.5} is both emitted directly from coal-fired plants and formed in the atmosphere through complex chemical reactions among precursor pollutants. RS Nos. 351-52 at 166-68 (INTV Ex. 4). Absent direction from EPA on how to handle both types of PM_{2.5}, direct modeling of PM_{2.5} is not feasible.

²⁶ IEPA conducted this analysis by scaling the SO₂ 100% load modeling results in proportion to the PM_{2.5} emissions. The SO₂ modeling results were selected because they evaluated Prairie State emissions individually for the appropriate averaging periods. The ISCST3 model used for the NAAQS modeling is a linear model that does not differentiate between pollutants. Thus, it was appropriate to use the SO₂ modeling runs for the PM_{2.5} analysis performed by IEPA.

provide resources for IEPA to have one installed and operated). Permit Condition 1.7 (INTV Ex. 1); *see also* RS No. 260 at 116-17 (INTV Ex. 4). Contrary to Petitioners' argument, this requirement was not in lieu of the demonstration, but instead is a recognition of the limitations of the existing resources. *See* RS No. 260 at 116-17 (INTV Ex. 4); *see also* Email from Rob Kaleel, IEPA, to Chris Romaine, IEPA (Jan. 15, 2004 at 4:59 p.m.) (INTV Ex. 26).

In sum, Petitioners have not refuted the PM modeling performed by PSGC and IEPA or the analysis conducted by IEPA. Petitioners likewise have not shown that EPA's interim implementation guidance for PM_{2.5}, which was relied on by PSGC and IEPA, is erroneous. EPA's interim guidance on this very technical issue is entitled to deference.

C. NAAQS Are Not Self-implementing.

Even assuming Petitioners were correct and an adequate demonstration of compliance with the NAAQS had not been performed, review would not be appropriate because the NAAQS are not self-implementing. *See In re Air Pollution Control Constr. Permit Issued to Wisc. Elec. Power Co. for the Elm Road Generating Station*, Case No. IH-04-03 (Wisc. Div. HRA, Aug. 3, 2004) (Order on Applicant's Motion to define the Scope of the Proceeding) ("Elm Road Order") (INTV Ex. 27); *Cate v. Transcon. Gas Pipe Line Corp.*, 904 F. Supp. 526, 536 (W.D. Va. 1995) (holding that "NAAQS implementation is a requirement imposed on the states in the SIP; it is not directly imposed on a source.... NAAQS are not directly enforceable against a source."); *see also* Memorandum from President W.J. Clinton to the Administrator of the EPA (July 16, 1997) (Implementation Plan for Revised Air Quality Standards) (INTV Ex. 28). Until EPA issues regulations on how to implement the new NAAQS in the PSD program, an applicant need not, and indeed cannot, directly demonstrate compliance with them as part of the process. Contrary to Petitioners' interpretation, the lack of implementation regulation does not bring the PSD permitting process to a screeching halt. In the absence of regulations, permitting agencies do

what was done in this case — they use surrogates and assess impacts consistent with EPA interim guidance. *See* Elm Road Order at 5 (limiting the scope of the hearing to sufficiency of permitting agency’s execution of federally approved surrogate approach) (INTV Ex. 27); *see also BP Cherry Point*, slip op. at 19 n.35 (analysis “which specifically addresses both PM₁₀ and PM_{2.5}, is entirely consistent with relevant Agency guidance.”).

Following promulgation of a NAAQS, each state must first collect data to determine whether its air quality regions are in attainment with the new standards. To implement the NAAQS, the state prepares its designation of areas (which can take months or even years), and EPA reviews the designation. EPA then promulgates various standards relevant to the PSD program, such as the significant emissions rate, significant monitoring concentration, PSD increment and monitoring protocols, all of which enable the new NAAQS to be incorporated into the PSD programs of the states. *See, e.g.*, EPA Rule on Prevention of Significant Deterioration for Particulate Matter (PM₁₀), 58 Fed. Reg. 31622 (June 3, 1993) (implementing the PSD program for PM₁₀ NAAQS promulgated in 1987).

EPA had not promulgated the required implementing regulations for either the 8-hour ozone or PM_{2.5} NAAQS before the Permit was issued in April 2005.²⁷ In their absence, IEPA acted reasonably. It used the available information and guidance from EPA to demonstrate that emissions from Prairie State will not cause or contribute to a violation of either the ozone 8-hour or PM_{2.5} NAAQS. IEPA’s approach was entirely consistent with the guidance provided in 40 CFR Part 51, Appendix W, §§ 6.2.1(c) and 6.2.2.1(c) for ozone and PM_{2.5}, respectively:

²⁷ Notably, neither ozone nor PM_{2.5} are discussed in the modeling guidelines in Appendix W, § 11.2.3.2, NAAQS Analyses for New or Modified Sources. Likewise, Appendix W, § 8.2.1(a) states: “An air quality analysis for SO₂, PM-10, CO, Pb, and NO₂ is required to determine if the source will (1) cause a violation of the NAAQS....” Section 8.2.1.2, addressing ozone and PM_{2.5}, does not include such a requirement.

Estimating the Impact of Individual Sources. Choice of methods used to assess the impact of an individual source depends on the nature of the source and its emissions. Thus, model users should consult with the Regional Office to determine the most suitable approach on a case-by-case basis (subsection 3.2.2).

To summarize, Petitioners have not shown that IEPA's approaches to demonstrating compliance with the 8-hour ozone and PM_{2.5} NAAQS are clearly erroneous or otherwise contrary to law. Nor have they shown that emissions from Prairie State will cause or contribute to a violation of the ozone 8-hour or PM_{2.5} NAAQS. All they have done is reiterate their speculation that emissions from Prairie State will cause or contribute to a NAAQS violation, while disagreeing with IEPA's and PSGC's approaches to demonstrate compliance, which are consistent with EPA's guidance. *See Appalachian Power Co. v. EPA*, 135 F.3d 791, 802 (D.C. Cir. 1998); *see also Steel Dynamics*, 9 E.A.D. at 180 n.16 ("noting that a petitioner cannot gain review of a permit merely by presenting an alternative theory regarding a technical matter"). Petitioners' arguments are insufficient to warrant review, much less a remand of the Permit.

VII. IEPA PERFORMED A COMPLETE “ENVIRONMENTAL JUSTICE” ASSESSMENT.

Petitioners argue that the Board should remand the Permit and order IEPA and EPA “to complete an environmental justice assessment, to consider the assessment’s findings, and to solicit meaningful public input in potential environmental justice matters.” Petition at 45. To support their argument, Petitioners claim that: (1) EPA and IEPA failed to conduct an environmental justice (“EJ”) assessment; (2) the agencies failed to ensure meaningful public participation; and (3) contradictorily, the area considered in the EJ assessment was not expansive enough. Despite relying exclusively on IEPA’s *Draft Environmental Justice Policy*,²⁸ Petitioners also claim that the Permit failed to meet the “the letter and spirit of the agencies’ environmental justice obligations and the overarching CAA policy requiring an informed public decision-making process.” *Id.* Petitioners’ arguments not only contradict one another, but they are factually and legally inaccurate.

Petitioners’ claim fails in its entirety because: (1) it is based on draft state guidance over which the Board has no jurisdiction; and (2) even if the Board has jurisdiction, IEPA performed an EJ assessment consistent with federal and state guidance.

A. The Board Has No Jurisdiction Because Petitioners’ Argument is Based Solely on State Draft Guidance.

Petitioners’ sole support for their EJ argument is one cite to IEPA’s *Draft Environmental Justice Policy*. As the Board has stated numerous times, it has no jurisdiction to review state

²⁸ Petitioners do not cite to President Clinton’s EJ Executive Order 12898 (“EJ Executive Order”) in making their arguments.

policies. *Metcalf*, slip op. at 42-43; *see also supra* at 13. Therefore, the Board has no authority to review this argument.²⁹

B. IEPA Performed a Proper EJ Assessment.

Contrary to Petitioners' assertion that no EJ assessment was performed, the Record indicates that IEPA conducted a thorough assessment consistent with relevant guidance. IEPA evaluated all consequential impacts of Prairie State and considered whether safeguards must be implemented to protect EJ communities (the "EJ Assessment").³⁰ *See* RS Nos. 340-43 at 161-63 (INTV Ex. 4); *see also* PSGC Response to Comments of Dr. K. Shrader-Frechette, No. 6 (July 12, 2004) (INTV. Ex. 29) ("PSGC Response to Shrader-Frechette Comments"). An EJ community is defined as "a minority or low-income community that bears disproportionately high and adverse human health or environmental effects." RS No. 342 at 161-62 (citing the EJ Executive Order) (INTV Ex. 4). IEPA determined that no EJ communities would be adversely or disproportionately impacted by the proposed facility more than the residents of more affluent communities. RS No. 340 at 161 (INTV Ex. 4); *see also* PSGC Response to Shrader-Frechette Comments, No. 6 (INTV Ex. 29) ("No minority or low-income community is disproportionately affected by this facility, nor does the proposed permit allow a disproportionate adverse health or environmental impact on any such community.")

Indeed, IEPA satisfied all the elements of an EJ assessment as identified by the Board. The Board has held that a complete EJ assessment comprises: (1) an analysis of income levels

²⁹ Even if Petitioners had cited the EJ Executive Order, pursuant to it, IEPA's EJ Assessment is not subject to judicial review. *See Sur Contra La Contaminacion v. EPA*, 202 F.3d 443, 449 (1st Cir. 2000).

³⁰ The PSD permitting procedure in Illinois was delegated by EPA to IEPA. 46 Fed. Reg. 9580, 9582 (Jan. 29, 1981). As such, the focus of the adequacy of the EJ Assessment should be on IEPA's actions.

“in the areas of maximum potential impact” from the proposed project’s emissions; and (2) a determination of whether the proposed project would result in a disproportionately high and adverse effect on EJ communities’ human health or environment in the areas of maximum potential impact. *In re AES Puerto Rico L.P.*, 8 E.A.D. 324, 350-51 (EAB 1999). The Board also held that an EJ analysis was complete in *Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 16 (EAB 2000) (“*Knauf II*”), where “the demographics of the area surrounding the proposed Knauf facility” were considered along with the air quality impacts. Not only did the EJ Assessment for Prairie State meet both elements applied in *AES Puerto Rico*, it also satisfied the virtually identical standard set by *Knauf II*.³¹

³¹ In *AES Puerto Rico*, in addition to the EJ analysis of income levels and environmental impacts, the Board also recognized that the “permit contain[ed] additional conditions that [were] not mandated by the PSD regulations but [were] within the Region’s discretion to require.” 8 E.A.D. at 351. The Board noted that certain SO₂ monitoring and air quality conditions were incorporated into the permit as a “tangible response to the community’s concerns about air quality and to fulfill the goals of the Executive Order.” *Id.* Similarly, as indicated by IEPA in the Responsiveness Summary, “because of concerns about the potential role of the proposed plant in PM_{2.5} air quality, the Illinois EPA [required] Prairie State to conduct post-construction monitoring related to PM_{2.5}.” RS No. 260 at 116-17 (INTV. Ex. 4). Therefore, the steps taken by EPA to support environmental justice in *AES Puerto Rico* were virtually identical to those taken by IEPA with respect to the Prairie State permitting.

1. The EJ Assessment included an analysis of income levels in “the areas of maximum potential impact.”

To satisfy the first element of an acceptable EJ assessment, IEPA began with an evaluation of the demographic data from USEPA’s EJ Geographic Assessment Tool “EJ GAT” for the area surrounding the proposed plant:³²

The Illinois EPA used proximity to the proposed plant to determine the affected population (the approach recommended in USEPA’s Interim Guidance for Investigating Title VI Administrative Complaints).... [T]he Illinois EPA used up to the maximum radius allowed by the EJ GAT (i.e., a ten-mile radius) as the proposed plant is an air emission source located in a rural area. The Illinois EPA then generated demographic data of the affected population.

Memorandum to File from Chris Pressnall, Assistant Counsel, IEPA, “Prairie State Generating Station, Washington County, Environmental Justice” at 2 (April 20, 2005) (“IEPA EJ Memo”) (INTV Ex. 30); *see also* RS No. 342 at 161-62 (INTV Ex. 4). IEPA generated demographic statistics representing the residential population within a one, two, five, and ten-mile radius. IEPA EJ Memo at 2 (INTV Ex. 30). This ten mile area assessed by the EJ GAT more than covers the relevant area of an EJ assessment established by *AES Puerto Rico* — the “areas of maximum potential impact.”³³ *AES Puerto Rico*, 8 E.A.D. at 350. Moreover, according to EPA’s Environmental Justice website, “the Environmental Justice Geographic Assessment Tool is meant to be used at the start of *all* EPA assessments.”

³² The EJ GAT provides the information necessary to identify and assess “adverse health or environmental impacts, aggregate or cumulative impacts, unique exposure pathways, vulnerable or susceptible populations, or lack of capacity to participate in decision making process among other conditions.” EPA’s Environmental Justice webpage, <http://www.epa.gov/compliance/environmentaljustice/assessment.html> (INTV Ex. 36).

³³ Modeling performed to predict ambient air concentrations is based on a steady-state Gaussian plume model. *See* 40 C.F.R. Part 51, Appendix W, A.5. As such, maximum impacts are typically predicted closer to the source. The farther away from the source, the less impact is predicted.

<http://www.epa.gov/compliance/environmentaljustice/assessmt.html> (INTV Ex. 36) (emphasis added). With respect to the area mapped by the EJ GAT, the data demonstrated that the ten mile radius surrounding Prairie State “is not a minority or low-income area and has levels of minority population and poverty that are the same or lower than the statewide averages.” RS No. 342 at 161-62 (INTV Ex. 4).

The EJ Assessment, however, went farther than ten miles and included the populations within the maximum significant impact area (“SIA”), which is defined as “the area as identified in the air quality modeling conducted by the plant within which more than a trivial impact is predicted....” *Id.* at 161-62, No. 342. This area extends beyond the radius of the EJ GAT, up to 50 km (approximately 31 miles). Modeling Addendum 2, § 2.1 (“[T]he SIA for the short-term [SO₂] 0.42 lbs/mmBtu emission limit is 50 KM”)³⁴ (INTV Ex. 76). IEPA concluded that, while “[l]ow-income communities are actually located many miles from the plant...,” they were identified “at distances with which other, more affluent communities are interspersed.” RS No. 340 at 161 (INTV Ex. 4); *see also* PSGC Response to Shrader-Frechette Comments, No. 6 (INTV Ex. 29).

2. There was no disparate impact on an EJ community in either the EJ GAT mapped area or the SIA.

Pursuant to the second element of a complete EJ assessment discussed in *AES Puerto Rico* and *Knauf II*, IEPA evaluated whether there would be any disparate treatment of an EJ community within the area mapped by both the EJ GAT and the SIA. *AES Puerto Rico*, 8 E.A.D. at 350; *Knauf II*, 9 E.A.D. at 16. The EJ Assessment found no such impact (*see* RS No. 342 at 161-62 (INTV Ex. 4)); *see also* PSGC Response to Shrader-Frechette Comments, No. 6

³⁴ The short-term SO₂ SIA was selected as it represented the maximum SIA for all the pollutants.

(INTV Ex. 29); IEPA EJ Memo at 2-3 (INTV Ex. 30). Petitioners offer no evidence to the contrary.

Based on the EJ GAT and SIA demographic data showing a mix of low-income and affluent communities in the area, IEPA concluded that this “means that residents of low-income communities would not experience air quality impacts from the plant that are different than those experienced by residents of more affluent communities.” *Id.* Specifically with respect to the disparate impact analysis of the SIA, IEPA concluded that “[t]he data ... identified and modeled for the proposed plant also shows that the plant does not raise issues for EJ.” RS No. 342 at 161-62 (INTV Ex. 4); *see also* PSGC Response to Shrader-Frechette Comments, No. 6 (INTV Ex. 29) (“A review of the data from the counties located within the area identified for significant impact analysis ... indicates that the location and operation of the facility as proposed do not implicate environmental justice issues.... It cannot be said that the impacts of the facility are disproportionate to a minority or low-income community.”). IEPA also concluded that emissions from Prairie State would not cause or contribute to an exceedance of the PSD increments or the NAAQS, which are set at levels determined to be necessary to protect the public health and welfare. RS No. 20 at 14, No. 239 at 107-08³⁵ (INTV Ex. 4); *see also* *Knauf II*,

³⁵ In assessing the impact of Prairie State on human health and the environment, IEPA noted that:

[A]ir quality modeling analyses show that the plant will not have noticeable effects on the air quality in Washington County and surrounding areas. This evaluation ... shows that the concentrations of these pollutants in the air would continue to be below the NAAQS.....

RS No. 20 at 14 (INTV Ex. 4) (“The modeling evaluation shows that the maximum concentrations of potential emissions from the plant are well within the applicable ambient standards. Given the conservative way that this evaluation is conducted, it is protective of
(continued...)”)

9 E.A.D. at 16-17 (discussing favorably the Region's use of the NAAQS and increment results in reaching its conclusion of no adverse impacts).

Petitioners offered no evidence to contradict the data or the conclusion by IEPA. In fact, “[t]he commenters did not assert that the proposed plant, in combination with other sources within a ten-mile radius, would disproportionately impact the surrounding community.” IEPA EJ Memo at 2 (INTV Ex. 30). In *Knauf II*, the Board rejected arguments by petitioners as to the methodology and data used for the demographics and the scope of the adverse impact analysis where they failed to show that the Region's conclusion regarding the lack of adverse impacts was clearly erroneous. *Knauf II*, 9 E.A.D. at 17. Accordingly, the EJ Assessment meets the requirements of a complete EJ assessment discussed in *AES Puerto Rico* and *Knauf II*. *AES Puerto Rico*, 8 E.A.D. at 350; *Knauf II* at 16. Thus, review should be denied.

C. An EJ Assessment Does Not Require A Cumulative Impact Assessment.

Petitioners attempt to discredit IEPA's EJ Assessment by arguing that a cumulative assessment is required. Petition at 43. According to Petitioners, a reasonable EJ assessment is a cumulative analysis of all sources in the area and their combined impact on EJ communities.³⁶ Petitioners cite no authority for this proposition of what is considered a proper EJ assessment. Indeed, they cannot. As illustrated in both *AES Puerto Rico* and *Knauf II*, an appropriate EJ assessment focuses on the impacts from the source under consideration.

people in the vicinity of the proposed plant, including the residents of Washington County.”); see also PSGC Response to Shrader-Frechette Comments, No. 6 (INTV Ex. 29).

³⁶ Petitioners specifically identify the Holcim Cement plant as a source that should be included in the EJ assessment. This facility is located in Missouri over 50 km from Prairie State. Its emissions were included in the ambient air quality analysis performed by PSGC.

To support their argument, Petitioners refer to an EJ assessment that EPA is conducting for the Onyx facility and claim that one of the issues being addressed is the mercury exposure among subsistence anglers in East St. Louis. Petition at 43-44. Petitioners attempt to connect Prairie State to the issue by asserting that its emissions “threaten” to increase the existing problem. Petitioners offer no evidence to support their claim that emissions from Prairie State will have any effect on the subsistence anglers that is disproportionate or adverse. Petitioners offer mere speculation, which is insufficient to justify review. *See Knauf II*, 9 E.A.D. at 17.

Similarly, without providing any evidence, Petitioners question why IEPA failed to explain how Prairie State will impact visibility in Mingo, which is 135 miles away, and not residents 30 miles away. Petition at 44. As an initial matter, IEPA found that Prairie State would not have an adverse impact on visibility of Mingo. RS No. 306 at 142-44 (INTV Ex. 4); *see also* Letter from Laurel Kroack, IEPA, to Paul Hoffman, Deputy Ass’t Dir., Fish and Wildlife and Parks, DOI (Jan. 13, 2005) (INTV Ex. 51); Dr. Ivan Tombach, “Human Perception of Visibility Impairment at the Mingo National Wildlife Refuge and Wilderness Area” (July 6, 2003) (“Tombach Report on Human Perception”) (establishing that any visibility impacts at Mingo will be below level of human perception) (INTV Ex. 37). Moreover, the relevant areas of review for an EJ assessment are the “areas of maximum potential impact.” *AES Puerto Rico*, 8 E.A.D. at 350. As previously discussed, both the EJ GAT and SIA included the areas of maximum impact. *See supra* at 66-67. To compare the SIA to a Class I visibility area, such as Mingo, which is a distinct and separately protected area under different criteria, is comparing apples-to-oranges. Pursuant to *AES Puerto Rico* and *Knauf II*, the EJ Analysis was properly conducted.

D. The EJ Analysis Included Meaningful Public Participation

Petitioners argue that the agencies failed to “ensure meaningful public participation” by the EJ communities “in and around East St. Louis, and others that an environmental justice assessment might identify.” Petition at 44. Petitioners also argue that it is “[a] long acknowledged principle of environmental justice [that] meaningful public participation requires much more than holding a hearing and extending the public comment period.” *Id.* In making these arguments, Petitioners ignore the protracted public participation process that occurred in this case.

IEPA held a public hearing on March 22, 2004, and the public comment period, which was initially scheduled to end on April 21, was subsequently extended four times until August 27, 2004. IEPA Order dated July 27, 2004 (INTV Ex. 31). IEPA also received comments regarding many potential EJ issues. *See, e.g.*, Letter from Dr. K. Shrader-Frechette to IEPA (June 19, 2004) (INTV Ex. 32); Letter from American Lung Association of Metropolitan Chicago to IEPA and EPA at 3 (Aug. 23, 2004) (INTV Ex. 33, Pet. Ex. 6); EJ comments by Kathy Andria of the American Bottom Conservancy, Public Hearing Transcript at 49 (Mar. 22, 2004) (INTV Ex. 34). IEPA subsequently addressed all of the comments in the Responsiveness Summary. RS Nos. 340-43 at 161-63 (INTV Ex. 4). These comments were the impetus for several Permit changes. *Id.* at 169-71. Petitioners fail to support their position by citing any authority for their bare assertion that the public involvement offered by IEPA was inadequate.

The only citation offered by Petitioners, IEPA’s *Draft Environmental Justice Policy*, does not support their argument. The draft IEPA policy merely indicates that EJ includes “the provision of adequate opportunities for meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” IEPA “Interim Environmental Justice (EJ) Policy” (INTV Ex. 35). Petitioners cite

nothing to indicate that the public comment period, including the numerous extensions, and the public hearing were insufficient to satisfy IEPA's draft policy.

The Prairie State public comment period provided the opportunity for "meaningful participation." IEPA reviewed the comments from all persons, and anyone could have submitted comments. Moreover, the complexity of the comments received by IEPA demonstrates that those commenting were "meaningfully involved." The comments included concerns regarding the application of "community benefits agreements" (RS No. 340 at 161 (INTV Ex. 4)), the expansion of the EJ Assessment to include facilities outside of the SIA (*id.* at 161, No. 341), the alleged failure of IEPA to consider "EJ implications in permitting decisions" (*id.* at 161-62, No. 342), and the benefit received by Metro-East residents versus the increases in air pollution (*id.* at 162-63, No. 343). Petitioners fail to cite any requirement that anything beyond the public comment period was necessary.

A similar issue arose in *Knauf II*, where in the context of EJ, "[s]everal petitioners raised issues about the quantity and quality of the public participation in [the agency's] permitting process." *Knauf II*, 9 E.A.D. at 17. There, in holding that the permitting agency met its regulatory obligations with respect to the public participation component of EJ, the Board noted that "the public's involvement over the course of this permitting process has had a significant role in shaping the conditions of the PSD permit that was ultimately issued...." *Id.* Similarly, the comments received regarding the Prairie State Permit influenced the Permit conditions, specifically with respect to additional fuel requirements, retirement of SO₂ allowances, applicability of certain BACT limits and standards at all times, the establishment of more stringent BACT limits, the creation of a lower daily limit for SO₂ emissions, more stringent requirements for continuous monitoring for mercury, and additional performance criteria for the

control of particulate emissions from material handling operations. *See* RS at 169-71 (INTV Ex. 4).

Accordingly, IEPA satisfied the EJ public participation requirements with respect to the Prairie State permitting. Petitioners failed to cite any authority or provide any facts that indicate that the public participation with respect to EJ was insufficient.

E. IEPA's EJ Assessment Considered The Appropriate Area.

Petitioners' final argument is that IEPA's use of EPA's EJ GAT was inappropriate because it limited the EJ Assessment area to ten miles, while the impact of Prairie State will exceed ten miles. Petition at 45. This argument must fail because it is factually and legally flawed.

Petitioners' argument that the EJ GAT is "illogical in this situation" because its maximum radius is ten miles must be rejected under *AES Puerto Rico*. Pursuant to the standard in *AES Puerto Rico*, all that is required is that the area of "maximum potential impact" be evaluated. *AES Puerto Rico*, 8 E.A.D. at 350. As discussed above (*supra* at 66-67), the ten mile radius would incorporate the area of maximum impact. Moreover, Petitioners ignore the overall area considered by IEPA in the EJ Assessment. The EJ Assessment included not only the ten miles considered by the EJ GAT, but also the 50 km SIA. *See id.* The SIA included substantially more than the necessary area of evaluation by the EJ Assessment because by definition the SIA includes not only "the areas of maximum potential impact," but all areas "within which more than a trivial impact is predicted..." RS No. 342 at 161-62 (INTV Ex. 4). Accordingly, Petitioners' concerns that the impacts of the proposed plant were not considered are unfounded.

In sum, Petitioners have failed to show that Prairie State will have a disproportionately high and adverse impact on a minority or low-income population. IEPA performed an EJ

analysis and concluded otherwise. Therefore, review of the Permit based on EJ concerns should be denied.

VIII. IEPA'S USE OF A SAFETY FACTOR WAS APPROPRIATE.

Petitioners argue that IEPA's use of a "safety factor" to establish certain BACT limits contravened Board precedent and is unsupported by the Record. While Petitioners admit that the use of a safety factor may be appropriate, they announce that safety factors can be applied only in four specific circumstances. Petitioners argue that these circumstances do not exist at Prairie State and, as a result, IEPA's use of safety factors to establish BACT limits for SO₂, NO_x, and PM was clearly erroneous. Furthermore, Petitioners state that even if the applicable law authorized IEPA to use a safety factor, the Record fails to describe and support the margin of safety applied.

Petitioners' attempt to limit the application of safety factors to four specific fact patterns is unfounded in law. As an initial matter, Petitioners are mistaken about the proper use of safety factors. They use the term "safety factor" to create semantic confusion with "margins of safety" that allow continuous compliance. An agency does not designate a specific number as the "safety factor" and mechanically apply that number to each emission rate that has ever been reported to arrive at a BACT limit. Instead, the agency must assess a wide range of data to make an informed engineering judgment as to the "margin of safety" necessary to ensure continual compliance. BACT is a case-by-case analysis that must be flexible enough to account for facility-specific characteristics. *Alaska Dep't Env'tl. Conservation*, 540 U.S. at 488 (recognizing that "Congress entrusted state permitting authorities with initial responsibility to make BACT determinations 'case-by-case'").

Board precedent has recognized margins of safety and safety factors as legitimate mechanisms to account for the uncertainty involved in establishing facility-specific emission limits prior to construction and the collection of actual operating data. The Board has suggested several circumstances when the use of a safety factor would be especially appropriate, but it has

certainly never limited their use to a specific set of facts. Nevertheless, many of the circumstances Petitioners claim must be present to authorize the use of a safety factor are, in fact, present at Prairie State. These facts are demonstrated in the Record. Therefore, IEPA was clearly justified in applying a safety factor when setting Prairie State's BACT limits.

Furthermore, it is important to note that the emission limits established for Prairie State, even with safety factors, are some of the most stringent in the country.³⁷ This Board has previously found no clear error when reviewing emission limits "within the range" of recently permitted BACT limits, and has recognized the permitting authority's "discretion to set BACT levels that 'do not necessarily reflect the highest possible control efficiencies but, rather, will allow permittees to achieve compliance on a consistent basis.'" *In re Kendall New Century Dev.*, PSD Appeal No. 03-01, slip op. at 17 (EAB April 29, 2003) (citations omitted). As such, Petitioners' arguments fail to demonstrate a clearly erroneous determination of fact or law, and they do not raise any policy concerns of great importance that the Board has not previously addressed. Accordingly, review of these arguments in the Petition should be denied.

A. Clarification of the Law

Petitioners claim that safety factors can be used, if at all, in only four specific scenarios: (1) where there is little experience with the application of a technology to a particular type of facility; (2) the control efficiency is known to fluctuate; (3) past decisions involved different source types; and (4) the permit requires an optimization period. Petition at 46. Although it is

³⁷ Compare Prairie State's emission limits (SO₂ = 0.182 lb/mmBtu, based on 98 percent removal efficiency (30-day rolling avg.); NO_x = 0.07 lb/mmBtu (30-day rolling avg.); filterable PM = 0.015 lb/mmBtu (3-hour block avg.); CO = 0.12 lb/mmBtu (24-hour block avg.)) with the range of emission limits for other recent applications or recently permitted PC boilers burning non-PRB coal (SO₂ = 0.12 to 0.182; NO_x = 0.07 to 0.12; filterable PM = 0.015 to 0.02; CO = 0.1 to 0.2). Calculation Sheet, Attachment 2.1 (INTV Ex. 3).

not clear, Petitioners imply that the legal authority for such a claim is found in the Board's decision in *Masonite Corp.*, 5 E.A.D 551 (EAB 1994). *Masonite* is just one of many Board decisions on the subject of safety factors. A clear reading of that decision, however, reveals that the Board never limited the use of safety factors to specific circumstances. Indeed, *Masonite* supports IEPA's decision.

Petitioners cite *Masonite* for the proposition that a permitting agency "has discretion to base an emission limitation on a control efficiency that is 'somewhat lower than the optimal level.'" Petition at 46 (citing *Masonite*, 5 E.A.D. at 560) (emphasis in Petition). They then assert that the Board has limited the use of safety factors to the four enumerated scenarios, but offer no additional cite to support this assertion. It is possible that Petitioners rely on *Masonite* for this proposition, but their reliance would be misplaced as *Masonite* makes no such limitation. In fact, directly following the passage in *Masonite* that Petitioners cite, the Board further explains the permitting agency's discretion in employing safety factors:

There are several different reasons why a permitting authority might choose to [use a safety factor]. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emissions limitation to reflect the highest control efficiency would make violations of the permit unavoidable. Another possible reason is that the technology itself, or its application to the type of facility in question, may be relatively unproven.... To account for these possibilities, a permitting authority must be allowed a certain degree of discretion to set the emissions limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the permittee to achieve compliance consistently.

Masonite, 5 E.A.D. at 560-61. In this passage, the Board offered two possible reasons why a permitting agency may use its discretion to employ safety factors. Nothing from this passage, or the rest of the decision, however, limits the use of safety factors to particular circumstances. The

Board simply noted that there are "several different reasons" why a safety factor may be used, and then proceeded to offer some examples.³⁸

Moreover, *Masonite* cannot be viewed in isolation. The Board has consistently recognized the validity of setting BACT limits with reasonable margins of safety. *See, e.g., Kendall New Century*, slip op. at 17-18; *Steel Dynamics, Inc.*, 9 E.A.D. at 188. In none of these cases has the Board limited a permitting agency's reasonable discretion to apply a safety factor. An excellent summary of the Board's position on safety factors, with cites to additional Board precedent, can be found in *Three Mountain Power*:

The Board has recognized that permitting agencies have the discretion to set BACT limits at levels that do not necessarily reflect the highest possible control efficiencies but, rather, will allow permittees to achieve compliance on a consistent basis. *In re Masonite Corp.*, 5 E.A.D. 551, 560-61 (EAB 1994); *see also In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 15 (EAB 2000) ("There is nothing inherently wrong with setting an emission limitation that takes into account a reasonable safety factor."); *Id.* ("The inclusion of a reasonable safety factor in the emission limitation calculation is a legitimate method of deriving a specific emission limitation that may not be exceeded."). Accordingly, we find no error in the District's decision to take into account a reasonable safety factor in setting the CO emission limitation.

Three Mountain Power, 10 E.A.D. at 53. As recently as March of this year, the Board affirmed that

[t]he underlying principle of all of these [safety factor] cases is that PSD permit limits are not necessarily a direct translation of the lowest emissions rate that has been achieved by a particular technology at another facility, but that those limits must also reflect consideration of any practical difficulties associated with using the control technology.

³⁸ If the Petitioners did not intend to use *Masonite* as the authority for limiting safety factors to four scenarios, then the Petition is completely devoid of authority for this claim. PSGC's review of Board decisions has not located any authority for limiting the use of safety factors in the manner suggested by Petitioners.

In re Cardinal FG Co., PSD Appeal 04-04, slip op. at 23 (EAB Mar. 22, 2005). Safety factors are simply the mechanism to account for facility-specific conditions and ensure the permitted facility can continuously comply with its BACT limits. Petitioners' assertion that safety factors can only be used in four narrow circumstances is unsupported and runs contrary to Board precedent.

B. IEPA Appropriately Applied a Safety Factor to Set the SO₂ Removal Efficiency.

The Permit requires 98 percent control of SO₂ emissions on an annual basis from Prairie State.³⁹ Petitioners argue that the BACT limit should require 98.2 to 98.4 percent removal efficiency, based on emissions data for the Harrison Plant showing such levels were allegedly achievable. Petition at 47. IEPA reviewed the data from this facility and concluded that its variability supported the Prairie State limit, with the application of a reasonable safety factor. Petitioners simply ignore this conclusion and, without support, claim IEPA's safety factor was too large.

Petitioners argue that IEPA's safety factor was incorrect for two reasons. The first is based on Petitioners' incorrect interpretation of *Masonite* as requiring certain fact patterns to be present in order to authorize the use of a safety factor. Even under Petitioners' contorted reading of *Masonite*, however, IEPA's use of a safety factor was appropriate here. Two of the scenarios Petitioners acknowledge as legitimate justifications for a safety factor are: (1) where there is little experience with the application of the technology at a certain type of facility; and (2) where

³⁹ To be clear, the Permit contains two BACT limits with respect to SO₂. The emission limit of 0.182 lb/mmBtu is based on a 30 day rolling average, and the 98 percent control efficiency is based on an annual rolling average. Permit Condition 2.1.2.b.ii (INTV Ex. 1). In this Count, Petitioners complain only that IEPA inappropriately applied a safety factor to establish the annual removal efficiency.

the data indicate that the control efficiency is known to fluctuate. Petition at 46. Prairie State falls into both categories.

As for the first scenario, IEPA responded to specific comments highlighting data from the Harrison Plant by noting that the Harrison Plant used “magnesium-enhanced lime” scrubbers to control SO₂ emissions, as opposed to the more conventional limestone-based scrubber proposed for Prairie State. RS No. 100 at 46-47 (INTV Ex. 4). IEPA then concluded that, for this variation of scrubber technology, “there is not an adequate body of data for performance at 98.4 percent to set this level of performance as BACT.” *Id.*; *see also* Letter and attachments from PSGC to Charles Matoesian, responding to comments from Carmeuse North America (“Carmeuse”) (July 12, 2004) (INTV Ex. 38) (“PSGC Response to Carmeuse”). This is exactly the scenario that Petitioners claim support the use of a safety factor: insufficient experience with a certain technology to support a specific limit. The Petition offers nothing to refute IEPA’s conclusion.

As to the second scenario, PSGC specifically responded to comments regarding the Harrison Plant’s supposed removal efficiencies by pointing out the variability in the data. PSGC Response to Carmeuse at 1-2. PSGC’s response noted that the comments submitted regarding the Harrison Plant’s removal efficiencies provided only a selective subset of data, and that the comments omitted the data from 2002 when the removal efficiency was below 98 percent. *Id.* at 1 (explaining that Harrison’s 2002 data showed a removal efficiency of only 97.7 percent). In response, IEPA reviewed the entire set of data from the Harrison Plant and concluded that “a safety factor would be particularly appropriate with the data cited by the comment because it is unclear that the control system being pointed to consistently achieved 98 percent control, even on an annual basis.” RS No. 100 at 47 (INTV Ex. 4). IEPA expressly noted the variability in the

data as a justification for using a reasonable safety factor. Again, this is exactly the scenario that Petitioners admit warrants the use of a safety factor.

Petitioners' second argument against IEPA's use of a safety factor to set the SO₂ BACT limit is that the selected averaging period already encompasses an adequate safety margin. Petitioners do not offer any legal or factual support for this argument even though it is their burden to show IEPA's determinations are clearly erroneous. For this reason alone, Petitioners' argument must fail. Moreover, Petitioners simply ignore the fact that the SO₂ removal percentage from the facility they advocate as representing BACT, the Harrison Plant, is based on an annual average as well. See PSGC Response to Carmeuse at 2 (INTV Ex. 38). Thus, IEPA's decision to annualize the requirement for removal percentage does not add an "additional" safety factor to the data from the Harrison Plant, as the Petitioners contend. Petitioners' argument on this point is meritless.

C. IEPA Appropriately Applied a Safety Factor to Set the NO_x BACT Limit.

Petitioners offer a collection of unsupported arguments to attack IEPA's use of a safety factor in setting the NO_x limit. Tellingly, the only legal citation contained in this section of the Petition is to *Masonite*, which, as discussed above, is misinterpreted by Petitioners. Petitioners' burden requires them to do more than make unsupported demands for stricter limits.

The first argument is that IEPA did not specifically identify the safety factor used. Again, no legal authority is offered to establish a requirement that the agency must quantify a precise mathematical safety factor. Interestingly, Petitioners had no problem creating a safety factor "in the neighborhood of 400 percent," or in the alternative, a safety factor of 42 percent,

and attributing these values to IEPA as the safety factors used.⁴⁰ Petition at 48 n.29. Of course, Petitioners' practice of simply picking the lowest 30-day emission rate they could find and comparing this to the BACT limit to identify a "safety factor" is not correct. *See supra* at 75-76. To suggest that safety factors can and should be calculated for each emission rate that the agency rejects as BACT is misleading and distorts both the purpose of BACT and Board precedent.

Furthermore, the Board has clearly left the decision of whether to apply a safety factor and the size of the safety factor to the permitting agency's reasonable discretion. *Three Mountain Power*, 10 E.A.D. at 53 ("The Board has recognized that permitting agencies have the discretion to set BACT limits at levels that do not necessarily reflect the highest possible control efficiencies but, rather, will allow permittees to achieve compliance on a consistent basis.") (citations omitted). The CAA does not require IEPA to establish a safety factor through some empirical process and then defend that value. Rather, IEPA must determine the lowest rate achievable on a continuous basis under all reasonable foreseeable operating conditions. The standard for reviewing IEPA's decision to use a safety factor to ensure continued compliance is whether it was clearly erroneous. Petitioners offer nothing to show it was.

⁴⁰ The 400 percent value suggested by Petitioners as a safety factor is clearly incorrect. To produce it, Petitioners compared the Permit's *30-day* BACT limit with a limit proposed for a *3-hour* averaging period by a witness (Matt Haber) advocating lower limits in the context of an unrelated federal enforcement action (which, by the way, was not accepted in the parties' final settlement agreement). *See infra* at 197-99 for a discussion why testimony from this witness should not determine the outcome of a BACT analysis. This apples-to-oranges comparison adds no value to the discussion. Moreover, IEPA addressed the data Petitioners' selectively chose to support their 42 percent. The agency found the data to be highly variable and inappropriate for setting a BACT limit below 0.07 lb/mmBtu. RS No. 137 at 63-64 (INTV Ex. 4); *see also* Letter and attachments from PSGC to Charles Matoesian (July 12, 2004) responding to comments of the Sierra Club prepared by J. Phyllis Fox at 23 (INTV Ex. 39) (noting variability in data) ("PSGC Response to Fox Comments"). Petitioners offer nothing to refute IEPA's determination.

Next, Petitioners contend that IEPA's rationale for using a safety factor is flawed because other sources have been able to achieve lower NO_x emissions at certain times without the use of a safety factor. Petitioners do not offer any support for this statement. Regardless, this argument ignores the fact that safety factors are used to set permit *limits* that must be met on a continual basis. The data submitted during the comment period to support a lower NO_x limit only demonstrates that a lower emission *rate* may be possible over a short time period. This does nothing to obviate the need for a safety factor to set an emissions limit that must be met at all times. Moreover, even if another permitting agency decided not to apply a safety factor in setting an emissions limit in another permit, that does nothing to affect IEPA's authority, recognized by the Board, to use its reasonable discretion to apply one in this case. IEPA determined the lowest limit that Prairie State can continuously achieve. This is what is legally required.

Petitioners also assert that none of the *Masonite* facts are present to justify a safety factor. As discussed above, Board precedent does not require any specific pre-conditions to using safety factors. Nonetheless, IEPA offered a number of reasons to justify a safety factor in this case, including: (1) the NO_x emissions data indicated variable control efficiencies (RS No. 137 at 63-64 (INTV Ex. 4));⁴¹ (2) certain data submitted reflected only the operation of control systems when relatively new, and did not take into account long-term performance over the life of the

⁴¹ IEPA's finding regarding the variability of NO_x data is supported in the Record. "Application of Long-Term Averaging Data to Project SO₂ and NO_x Emissions Targets from the Proposed Prairie State Generating Station," prepared by J.E. Cichanowicz, at 6-8 (originally submitted Oct. 28, 2003, resubmitted Jan. 30, 2004) (INTV Ex. 40).

system (*id.*);⁴² and (3) certain data did not appropriately account for the quality of coal to be used at Prairie State and its affect on the control system (*id.* at 65, No. 139).⁴³ Even Petitioners' acknowledge that the first of these reasons, demonstrated variable control efficiencies, is a legitimate justification for a safety factor. Petition at 46. Therefore, even under Petitioners' contorted reading of *Masonite*, IEPA's use of a safety factor was justified.

Finally, Petitioners repeat an argument against the use of a safety factor. As with the SO₂ removal efficiency requirement, they claim that the averaging period for the NO_x limit already provides an inherent safety factor, implying that an additional safety factor is not warranted. Petitioners are mistaken, however, as to the averaging period for the NO_x emission limit because they complain that this period allows the source to "average out high emission periods during any twelve-month period." Petition at 48. But the averaging period for the NO_x limit is a rolling 30-day average, not an annual average as was the case for the 98 percent SO₂ removal requirement. Permit Condition 2.1.2.b.iii (INTV Ex. 1). IEPA explained why this averaging period was selected:

As a general matter, the Illinois EPA elected to retain a BACT limit, in lb/mmBtu, for NO_x (as well as SO₂) that applies on a 30-day average. This is because this time period is the most common form in which BACT limits are set for these pollutants, and is identical to the time period used by USEPA for NO_x and SO₂ emission standards in the NSPS for utility boilers. It also reduces

⁴² The Record contains ample support for IEPA's conclusion that BACT cannot be established based on data demonstrating the effectiveness of new control systems. PSGC Response to Fox Comments at 23 (INTV Ex. 39). The relevant inquiry is what emission limit is continuously achievable over the life of the system. *See Cardinal FG*, slip op. at 21-22 (although other facilities have reported lower emission rates with new processes, those facilities were starting to report failures; hence, the agency was reasonable to discount those early emission rates).

⁴³ The effect of coal quality on NO_x emissions is well documented in the Record. *See, e.g., Hendrickson Email* at 2 (INTV Ex. 24).

the magnitude of the safety factor that is otherwise needed if limits are set on a daily basis.

RS No. 141 at 66 (INTV Ex. 4). As explained, a 30-day averaging period is common for NO_x BACT emission limits; plus, this period was selected to minimize the margin of safety necessary to establish a limit that can be met on a continual basis. Petitioners offer nothing to refute IEPA's determination and, thus, fail to carry their burden on this issue.⁴⁴

D. IEPA Appropriately Applied a Safety Factor to Set the PM BACT Limits.

In this section, Petitioners repeat the same arguments made against the use of a safety factor for NO_x and SO₂. They claim: (1) the *Masonite* fact patterns are not present; (2) IEPA used too large a safety factor; and (3) IEPA did not justify the safety factor. As with the previous attempts, each argument is fatally flawed, and Petitioners fail to establish that IEPA's use of a safety factor was clearly erroneous.

Petitioners' first argument is that none of the so-called "*Masonite* factors" are present. Again, the Board has never required any specific facts to be present in order to use a safety factor. Nevertheless, Petitioners admit that two scenarios would justify the use of a safety factor: (1) where the control efficiency is known to fluctuate; and (2) where the permit requires an optimization period. Petition at 46. Both situations are present at Prairie State.

As to the first scenario, the variability found in the data on PM emissions control is undeniable. IEPA pointed this out in response to a selective presentation of PM emissions data from a Petitioner (Sierra Club). RS Nos. 163-64 at 75-76 (INTV Ex. 4). The Petition offers

⁴⁴ Petitioners attempt to portray this argument as an important policy issue that warrants review. Petition at 48. The authority to apply safety factors is an issue that has been fully addressed by the Board in prior decisions. *See supra* at 77-79. No new policy issue has been raised to warrant further review.

nothing new to refute this response. As to the second fact pattern, it is equally clear that the Permit contains an optimization period for PM. Permit Condition 2.1.16 (INTV Ex. 1). Petitioners admit as much in the Petition, and even base one of their claims on the supposed illegality of such a period.⁴⁵ Petition at 79-80. Even though the Board has never limited safety factors to those circumstances identified by Petitioners, two of the fact patterns Petitioners believe must be present are actually present. Petitioners' argument clearly fails.

Petitioners' second argument is that the safety factor is excessive. As they did in the section on the NO_x limit, Petitioners attempt to identify the specific safety factor by simply choosing one PM emission rate from a source test and comparing that rate to the final permit limit. Petition at 49. As discussed above, this exercise is a complete misrepresentation of how safety factors are used. *See supra* at 75-76. Petitioners use this approach only to put forth a large figure and claim that IEPA's safety factor was excessive. The same logic that militates against using just one short-term source test to establish a BACT limit applies equally to this situation. *See* RS No. 111 at 53, No. 114 at 54, No. 136 at 62-63, No. 137 at 63-64, No. 230 at 103-04, No. 241 at 108-09. One source test does not establish BACT, nor does it establish the safety factor used to set a BACT limit.

In addition, IEPA specifically responded to the data referenced by Petitioners and declared that the data actually supported the agency's use of a safety factor because it "confirms significant variability in the tested PM/PM10 emissions of power plants." *Id.* at 76, No. 163. IEPA carefully evaluated the body of PM control data, noted considerable variability across the

⁴⁵ Petitioners' arguments are internally inconsistent. In Issue VIII, they argue that a safety factor cannot be used unless the Permit requires an optimization period, but in Issue XII, they argue that the CAA does not authorize the use of optimization periods for PSD permits at all.

data, and applied a reasonable safety factor to set a BACT limit that Prairie State could meet on a continual basis and that is consistent with other recent BACT determinations. Petitioners have done nothing to show this process was clearly flawed.

In their final attack on the use of a safety factor to establish PM limits, Petitioners argue that a “significantly larger” safety factor was not warranted in this case. They attack IEPA’s justification for applying a safety factor by offering unsupported arguments against selective portions of IEPA’s explanation. To demonstrate, IEPA stated:

[t]he safety factors associated with limits for PM emissions must be significantly larger, in relative terms, than those associated with the limits set for emissions of SO₂ and NO_x. This is a consequence of the nature of particulate control systems, the very high levels of control that must be achieved, the resulting low levels of emissions and the use of short-term testing to confirm compliance.

Id. at 73, No. 158. Obviously, the agency provided multiple reasons why a larger safety factor was necessary for the PM limit. Petitioners, however, first take issue with that portion of IEPA’s statement explaining the inherent nature of PM control systems (*i.e.*, variable PM emissions data). Petition at 49. Petitioners offer only an unsupported statement that ESPs are reliable instruments capable of achieving consistently high removal efficiencies. *Id.* at 50. They offer no evidence or data to show that ESPs eliminate the need for a safety factor, and they ignore much of the rest of IEPA’s justification. Petitioners have not satisfied their burden.

Next, Petitioners selectively highlight another portion of IEPA’s explanation describing how Prairie State will be required to achieve very high levels of control. They argue, again without support, that IEPA’s position is self-defeating because it means that as BACT levels become more stringent, and a safety factor becomes more necessary, then limits become more relaxed. Petitioners’ logic is flawed because increasing the need for safety factors and continuing to lower permit limits are not mutually exclusive concepts. The limits are not

“relaxed” in any sense of that word. IEPA’s statement simply recognizes that as limits become more stringent, and the margin for operating error becomes smaller, some mechanism must be used to ensure facilities are able to meet their limits on a continual basis. Petitioners have offered nothing to show this concept is clearly erroneous, and again, they ignore the cumulative nature of IEPA’s explanations. Petitioners’ burden requires that they do more.

Because Petitioners fail to establish IEPA committed clear error in applying a reasonable safety factor to set BACT limits, the Petition for Review on this issue should be denied.

IX. IEPA APPROPRIATELY ADDRESSED COAL WASHING.

Petitioners claim that the BACT determination for Prairie State is flawed because IEPA (1) failed to factor washed off-site coal into the BACT limits; (2) failed to articulate any “unusual circumstances” that would justify not requiring washing of on-site coal; (3) failed to articulate energy, environmental or economic impacts different from other plants that use washed coal; and (4) erred in its economic impact analysis that rejected coal washing as BACT for Prairie State. Without support or discussion, Petitioners also urge the Board to review this “important policy issue.”⁴⁶

PSGC and IEPA fully evaluated coal washing in the BACT analysis for Prairie State. Petitioners’ allegations on each of these issues simply restate prior arguments and express their disagreement with IEPA’s decision. In attacking IEPA’s decision to reject coal washing for Prairie State, Petitioners cite only to portions of three responses in the Responsiveness Summary. They ignore the fact that IEPA devoted over 20 pages and 45 responses of its Responsiveness Summary to coal washing. In issuing the Permit, IEPA also provided a detailed, 16-page cost effectiveness analysis titled “Evaluation of Coal Washing.” IEPA determined that high efficiency add-on control devices are required to achieve BACT at Prairie State, and coal washing would add little to the overall necessary control. In addition, IEPA rejected coal washing because of its adverse environmental, energy, and economic impacts in accordance with

⁴⁶ As a preliminary matter, despite Petitioners’ apparent dissatisfaction with IEPA’s decision not to require coal washing for the on-site coal at Prairie State and their suggestion that coal washing is an issue in other permits, there is no “important policy issue” involved. Except for noting that coal washing is an issue in other cases, Petitioners offer no further explanation or support as to why coal washing is a “policy issue,” nor can they. BACT is a case-by-case determination. IEPA reviewed site-specific information regarding environmental, energy and economic costs of coal washing for Prairie State and rejected it. A site-specific decision does not implicate a “policy” deserving the Board’s review.

the definition of BACT. Any one of these three factors would be a sufficient basis to reject coal washing. While Petitioners have attempted to challenge the environmental and economic basis for IEPA's rejection, they have not challenged IEPA's energy analysis. Therefore, Petitioners' issue regarding coal washing should fail on that basis alone. IEPA's extensive analysis rejecting coal washing as BACT for the on-site coal at Prairie State was reasonable and supported in the Record. Petitioners have offered nothing that indicates clear error.

A. IEPA's Analysis Rejecting Coal Washing Due to Environmental, Energy, and Economic Costs is Reasonable and Well Supported.

From the initial October 2001 Application to the final Permit, Prairie State has been described as a mine-mouth power plant project. Permit Application (Oct. 2001) (INTV Ex. 42); Permit Condition 1.3 (INTV Ex. 1). Except in limited circumstances articulated in the Permit, the fuel for the plant will be delivered from nearby mining facilities via conveyor belt (hereinafter "Prairie State Coal"). Permit Condition 1.3 (INTV Ex. 1). The October 2001 Permit Application did not address coal washing. In a letter to PSGC on January 25, 2002, IEPA requested a full analysis of coal washing as BACT. Letter from Donald Sutton, IEPA, to Lars Scott, PSGC at 2, (Jan. 25, 2002) (INTV Ex. 46). In response to that request, PSGC presented an extensive analysis of economic, energy and environmental costs associated with wet coal washing for that fuel. Permit Application, App. J (Oct. 2002) (INTV Ex. 6).

1. Description of Coal Washing

As discussed in Appendix J of the 2002 Permit Application, the wet coal washing process improves coal's burning characteristics and reduces its transportation costs by crushing and/or sizing the coal, reducing impurities (*e.g.*, ash, sulfur and moisture), and improving the heat ratio (Btu per pound of coal). *Id.* at J-1. The typical process for Southern Illinois coal relies on the difference in densities between coal and the surrounding pyritic material — simply put, coal

floats and rock sinks in a tank containing a liquid of the right density. The wet process starts with pulsing currents of water or air through a bed of coal to separate the impurities. *Id.* The process continues with the use of a series of tanks containing varying densities of float media to further separate the impurities from the coal. While this description sounds simple, as depicted in the process flow diagram in Figure J.2.-1 of the Application, the modern coal washing process is complex. *Id.* (a more technical description is provided at J-3). The process uses large amounts of water and produces significant waste in the form of gob and slurry.

2. PSGC's Analysis of coal washing

In the October 2002 Permit Application, PSGC included in the SO₂ BACT analysis an evaluation of the costs and benefits of washing the Prairie State Coal in addition to the already state-of-the-art pollution control equipment train — low NO_x burners, SCR, ESP, wet scrubber, and WESP. PSGC retained Dr. Richard Honaker of the University of Kentucky to determine the optimum level of wet coal washing for the Prairie State Coal.⁴⁷ Dr. Honaker's report, dated August 5, 2002 ("Honaker Report"), was included in Appendix J to the Permit Application (INTV Ex. 6).

Dr. Honaker's report provides technical information on the level to which sulfur can be removed from the Prairie State Coal using wet coal washing. Dr. Honaker first confirmed that the Prairie State Coal had similar characteristics to a reference Illinois No. 6 seam coal from the nearby Randolph mine at which coal washing occurs. Honaker Report at 6, 15 (INTV Ex. 6). In

⁴⁷ Prairie State will already be using a dry coal cleaning process with a rotary breaker to crush and screen the coal from the rock mined with it. This process removes impurities, including a small amount of sulfur. It represents the baseline scenario for determining the benefits and costs of wet coal washing. Permit Application App. J at J-2 (Oct. 2002) (INTV Ex. 6). Additional information about dry coal cleaning was submitted in April 2004. "Analysis of the Dry Pre-Combustion Coal Cleaning Potential for Sulfur Reduction: Prairie State Project" by R. Honaker (March 30, 2004) (INTV Ex. 44).

particular, he confirmed that sulfur is found in two forms: (1) organic sulfur, which is bound in the combustible coal; and (2) pyritic sulfur, which is part of the non-carbon material mined with the coal. *Id.* at 8. The Honaker Report indicated that for the Prairie State Coal, “the sulfur reduction potential by pre-combustion cleaning is limited.” *Id.* at 10. Dr. Honaker explained that the sulfur is bound up in the coal itself rather than in the inorganic pyritic material. *Id.* Moreover, the pyritic material is finely distributed in the coal. *Id.* This means that it is difficult to reduce the total sulfur content without wasting significant amounts of coal and associated energy. *Id.* (providing chart showing non-linearly decreasing energy recovery with increased pyritic sulfur reduction).

Dr. Honaker concluded that the optimum sulfur removal, accounting for energy loss, occurred at about 20 percent of total sulfur removal. *Id.* at 15. Dr. Honaker noted that going to a slightly higher sulfur removal rate of 25 percent resulted in significantly lower energy recovery (*i.e.*, greater energy loss) at nearly double the cost. The optimum level of coal washing (*i.e.*, 20 percent sulfur removal), as described in the Honaker Report at 11 and 15, was analyzed in PSGC’s top-down BACT analysis. Permit Application, App. J at J-5 (Oct. 2002) (INTV Ex. 6).

3. The BACT Analysis

In terms of SO₂ emission reductions, optimum coal washing by itself would reduce 20 percent of the total coal sulfur content; however, the add-on controls would remove 98 percent of the SO₂ in any event. As IEPA recognized, the 20 percent sulfur reduction in the coal and reduction of SO₂ emissions, if any, comes at a price in the form of environmental, energy, and economic impacts. *See Evaluation of Coal Washing* at 1 (April 2005) (INTV Ex. 43); RS No. 54 at 26, Nos. 63-64 at 30, No. 67 at 32-33, No. 97 at 45 (INTV Ex. 4).

a. Environmental Impacts

As noted in Appendix J, no processing device is 100 percent efficient. Wet washing removes undesired soil, rock, and mineral, but also some of the coal itself. Moreover, it generates two waste streams: (1) solid waste coal “gob” and (2) wastewater coal “slurry.” These waste streams produce adverse environmental impacts. A large landfill is required to dispose of gob, and surface impoundments are required to store and treat wastewater slurry. Specifically, coal washing for Prairie State would generate approximately 2.6 million tons per year of solid waste (*i.e.*, gob) and 27 million gallons per year of water/slurry mixture composed of very fine (and thus hard to manage or remove) coal, clay, sulfur, and other impurities found in the coal. Permit Application, App. J at J-6 (Oct. 2002) (INTV Ex. 6). The slurry impoundments required also pose the potential for accidental spills or releases that could result in groundwater and surface contamination. *Id.*; See RS No. 61 at 29, No. 97 at 45 (INTV Ex. 4). IEPA noted in its Responsiveness Summary that environmental groups have raised concerns about these environmental issues associated with coal washing. RS No. 67 at 32-33 (citing “Cradle to Grave: The Environmental Impacts from Coal,” Clean Air Task Force: 2001) (INTV Ex. 4).

b. Energy Impacts

Washing the coal at Prairie State has significant energy impacts. Based on Dr. Honaker’s analysis, PSGC calculated that 22 to 25 percent of the raw coal energy would be lost and would have to be replaced, an energy equivalent of 95 MW — enough to power 95,000 homes. Permit Application, App. J at J-6 (Oct. 2002) (INTV Ex. 6). It would also result in a need to mine and wash an additional 1.3 million tons of coal per year. *Id.* IEPA determined that:

Even though the loss of combustible material during washing is only 22%, the coal being mined to make up for this loss is also being washed, with an accompanying loss of combustibles so the increased amount of coal that has to be mined to make up for the loss is actually more than 27%.

Evaluation of Coal Washing at 2 (April 2005) (INTV Ex. 43). IEPA also noted that the energy consumed by the coal washing plant would add a significant “parasitic” load on Prairie State — energy that would otherwise be available to the grid.

c. Economic Impacts

PSGC also prepared an extensive economic analysis of the cost of coal washing. Because coal washing by itself is not a “dominant” technology (*i.e.*, other control methods provide greater emission reductions at lower annualized costs), it is appropriate to look at incremental rather than average costs of SO₂ removal. Draft NSR Manual at 41 (INTV Ex. 22). PSGC concluded that incremental costs per ton of SO₂ removed is \$68,955. Permit Application, App. J at J-8 to J-10 (Oct. 2002) (INTV Ex. 6). This cost is excessive.

4. IEPA’s Conclusions

After evaluating the information submitted in the Application, IEPA issued a draft Permit that did not require coal washing. The Project Summary accompanying the draft Permit summarized the analysis of wet coal washing and concurred it was not BACT for the proposed plant because the energy, environmental, and economic impacts would be excessive. In issuing the draft Permit, IEPA’s finding was premised on the plant being a mine-mouth facility, so that it was clear that coal washing would not otherwise be conducted by Prairie State for the purpose of reducing coal transportation costs. IEPA found that the cost effectiveness of coal washing was “in excess of \$10,000 per ton of SO₂ removed.” Project Summary at 7-8 (INTV Ex. 2).

There were substantial public comments on the coal washing issue. IEPA issued its evaluation with the final Permit confirming Dr. Honaker’s conclusions about coal washing, which were not disputed in the public comments. Evaluation of Coal Washing at 2-3 (April 2005) (INTV Ex. 43). IEPA acknowledged, however, that commenters disputed the cost data and PSGC’s focus on the scenario of coal washing that Dr. Honaker deemed optimal — the 20

percent sulfur case (with the wash plant operating at a relative density of 1.5). *Id.* In an independent analysis, IEPA evaluated projected performance and cost effectiveness of a wash plant operating at different relative densities. IEPA looked at the capital and operating costs of the wash plant, the costs of mining and cleaning the make-up coal lost in the washing process, the economic cost associated with the parasitic load, and the capital and operating costs of the power plant (taking into account changes in costs of disposal between washed and unwashed coal) required to reach a variety of emission rates ranging from 0.109 to 0.150 lb SO₂/mmBtu. *Id.* at 11. IEPA's independent analysis shows that the cost effectiveness ranged from \$10,904 to \$40,679 per ton of SO₂ using coal washing in addition to the proposed pollution control equipment. *Id.*

IEPA compared this to the average cost of using high efficiency scrubbers to achieve the same emission limits. These costs ranged from \$44 to \$438 per ton. *Id.* In rejecting coal washing as BACT due to its excessive economic costs, IEPA concluded that "[t]his evaluation confirms that the use of coal washing to supplement the high efficiency scrubbers at the proposed plant would not be a cost effective approach to control of SO₂ emissions." *Id.* at 11.

As IEPA aptly stated in its Responsiveness Summary:

Coal washing does not achieve the required level of emissions control to allow it to stand in place of the add-on control devices that must be used on the boiler. The theoretical benefits of coal washing as a supplemental technique with the necessary add-on controls are outweighed by the cost, energy and environmental impacts of coal washing. As a general matter, coal washing would control the readily controlled emissions, which the add-on control devices would easily control. Coal washing would do little to achieve the overall control of emissions that is required and which can only be achieved with modern high efficiency add-on control devices.

RS No. 54 at 26 (INTV Ex. 4).

In addition to the economics, IEPA focused on the energy losses from coal washing at Prairie State and verified Dr. Honaker's assessment of the loss of coal from washing. IEPA dealt with comments challenging PSGC's assessment of energy losses and arguing that coal washing would not result in energy losses because coal wastes could be burned in a circulating fluidized bed to recover the energy:

It is unquestioned that coal washing is not a perfect process and removes coal from the fuel stream, as well as rock and pyritic minerals. Coal washing is accompanied by a substantial loss of coal material with the coal waste. (Otherwise, how would coal waste have the energy value to be used as fuel in power plants that are specifically developed to burn coal waste.) Additional coal (energy) must be mined to make up for the coal that is lost with the waste. The amount of coal lost in washing, which must be made up by mining more coal, is also related to the type and level of washing that is conducted. The estimate provided by Prairie State for the amount of coal that would be lost to the waste with washing to different levels of sulfur removal is adequately supported. The overall analysis has also been properly conducted as it is based on the amount of energy (Btu) that is required for the boilers, not the amount of coal, which does vary depending upon whether raw or washed coal is fired.

... At the same time, it must be recognized that coal mining and coal washing do consume energy that are part of the internal energy costs of generating electricity. These energy costs only loose [sic] importance if they are accompanied by equivalent energy savings elsewhere in the power generation process.

Incidentally, as the energy in coal waste could be recovered, as mentioned by the comment, this is effectively what the proposed plant would do as a mine mouth plant. However, it would do so without first processing the coal and creating coal waste (avoiding the impacts of coal washing) and then having to construct and operate a third boiler. In addition, it would do so without uncertainty about the future fate of the coal waste, as the Illinois EPA cannot prohibit the disposal of coal waste and require the plant to continue to operate this third boiler. As such, the proposed plant would do exactly what the comment suggests, that is, reclaims coal waste by simply avoiding creation of coal waste, with the environmental concerns that it poses.

RS No. 66 at 31-32 (INTV Ex. 4).

In issuing the final Permit, IEPA determined that coal washing was not BACT for the Prairie State Coal. However, since the analyses rejecting coal washing were based on mine-mouth coal, IEPA required washing of any coal from other mines.

B. Petitioners Fail to Carry Their Burden on Coal Washing Claims.

Petitioners raise four claims with respect to coal washing, none of which is sufficient to show any deficiency in IEPA's BACT analysis.

1. As permitted, the use of washed coal in limited circumstances is BACT.

Petitioners claim that the Permit Condition allowing the use of washed coal from other coal mines during "extended interruption in the mine mouth coal supply" is ambiguous and fails to meet BACT requirements. Petition at 51. Petitioners also argue that the Permit Condition allowing limited use of washed coal is unnecessarily broad and does not limit the length of any interruptions. Petitioners ask that the permit be remanded to "limit the length of the interruption." *Id.*

Petitioners offer no legal support for their general complaint about this condition in the Permit. They cite no regulation or statute that has been violated, nor do they cite to any Board precedent prohibiting such a provision. Prairie State is a mine-mouth plant, and IEPA is reasonable to allow washed off-site coal in the event the on-site source is interrupted.

Moreover, Petitioners have no right to complain. *See Old Dominion Elec. Coop.*, 1992 EPA App. LEXIS at *41-42 (petitioners are in no position to oppose decisions to tighten permit restrictions). As they recognize, the use of washed coal from other mines could result in lower SO₂ emissions than the use of unwashed Prairie State Coal. Petition at 51. The Permit requires not only that off-site coal be washed, but the 98 percent removal rate of uncontrolled SO₂ from the boiler also applies. Permit Condition 2.1.2.b.ii.B (INTV Ex. 1). Thus, the two requirements

(use of washed coal and the minimum removal efficiency of 98 percent) effectively set a more stringent emission limit than the 0.182 lb/mmBtu 30-day average imposed under normal operating conditions using Prairie State Coal. This more stringent limit is roughly equivalent to what Petitioners seek in requesting coal washing for the Prairie State Coal.

Petitioners also make the irrelevant argument that “Peabody [sic] could use this clause to gain advantage in labor negotiations or to gain a business advantage in the marketplace, events that do not warrant exceptions from compliance with a PSD permit.” Petition at 51. IEPA responded to this argument in its Responsiveness Summary. See RS No. 331-332 at 157-58 (INTV Ex. 4). Petitioners say nothing to refute those responses. Moreover, the permitting provisions requiring the use of washed coal during interruptions of the mine-mouth supply and 98 percent removal on an annual basis do not represent an “exception” from compliance with the Permit. All conditions of the Permit are still in force.

2. “Unusual circumstances” were documented.

Petitioners argue at length that coal washing cannot be eliminated as BACT for Prairie State unless “unusual circumstances” were documented because eighty percent of Eastern bituminous coal is currently washed. IEPA spends a good portion of its Responsiveness Summary and Evaluation of Coal Washing explaining these “unusual circumstances.” IEPA explains that, while coal washing is used at power plants in Illinois, none of those other power plants have the add-on controls that Prairie State will employ. RS No. 61 at 29, RS No. 89 at 42 (INTV Ex. 4). Those add-on controls will remove the sulfur that coal washing would remove and more. *Id.* at 26, No. 54. These add-on controls at Prairie State are the “unusual circumstance” that Petitioners contend must be present. *Id.* at 29, No. 61; see also Letter from Dianna Tickner, PSGC, to Charles Matocsian, IEPA, at 42 (July 12, 2004) (“Tickner July 12 Letter”) (“The unusual circumstances at PSGS are that the boilers and pollution control

equipment are specifically designed to handle high sulfur, high ash coal that other facilities cited by the Sierra Club are not. Moreover, [Prairie State] is a mine-mouth facility and transportation costs savings are not available to offset the cost of coal washing.”) (INTV Ex. 39).

Moreover, because those other facilities do not have the add-on controls that Prairie State will have, the other plants do not incur the incremental costs of coal washing that Prairie State would suffer. *See* Evaluation of Coal Washing at 11-13 (INTV Ex. 43) (providing average and incremental costs of add-on controls and coal washing). The incremental cost analysis clearly shows that coal washing is not cost effective and thus is not BACT. *Id.* IEPA also justified the use of incremental cost because the high efficiency scrubbers distort the average cost analysis. The scrubbers are so cost effective compared to coal washing that *even if coal washing resulted in no additional SO₂ removal*, coal washing and scrubbing together might be deemed reasonable if evaluated solely on an average cost effectiveness basis. *Id.* (discussing the “anomalous results” of average cost analysis).

The essence of a BACT determination is a case-by-case analysis. IEPA looked at site-specific factors at Prairie State, which are, by common sense definition, “unusual circumstances.” For example, IEPA confirmed the limited “washability” of the specific Prairie State Coal as presented by Dr. Honaker (*i.e.*, because sulfur in that coal is bound more into the combustible organic rather than the inorganic pyritic material, washing it results in higher energy losses). *Id.*; Honaker Report at 10 (INTV Ex. 6). IEPA identified other unusual circumstances, including new laws governing wastewater from coal washing facilities and risks posed by wastewater solids. RS No. 61 at 29, No. 97 at 45 (INTV Ex. 4). *See* Email from Don Sutton to Chris Romaine regarding updated interpretation of 35 IAC§ 406.203 (Dec. 14, 2004, 9:36 a.m.) (INTV Ex. 45) (describing new interpretation of water quality standards and concluding,

“[a]lthough the elimination of coal washing is understandably the most environmentally friendly option, that option is only feasible if the end user has the capacity to use such un-washed coal.”). Petitioners simply disagree with IEPA’s conclusion; they repeat their questions, but offer nothing to indicate that IEPA was incorrect.

3. IEPA correctly evaluated environmental impacts.

IEPA rejected coal washing at Prairie State because of its adverse environmental, energy, and economic impacts. Petitioners argue that IEPA improperly eliminated coal washing “*in part*” due to environmental impacts. Petitioners contend those impacts are acceptable because the same impacts are experienced at other facilities that use coal washing.⁴⁸ As an initial matter, by using the term “in part,” Petitioners recognize that IEPA’s rejection of coal washing was also based on other factors. Those other factors alone would be sufficient to sustain IEPA’s decision. Moreover, Petitioners offer no authority for the proposition that IEPA’s analysis of environmental harm from coal washing must be comparative in nature (*i.e.*, that Prairie State’s adverse environmental impacts must be worse than adverse impacts from coal washing at some other plant). Because a BACT determination is a case-by-case analysis, what may be an acceptable environmental risk for one facility may not be acceptable at another. IEPA’s overriding consideration for coal washing was that it does little to reduce emissions from Prairie State because of the necessary high-efficiency controls that will be used. Because there is little, if any, incremental benefit at Prairie State from coal washing, IEPA would be justified in not allowing substantial incremental environmental risk.

⁴⁸ While subsection “C” on page 54 of the Petition is titled “Energy, Environmental and Economic Impacts,” the text of the subsection deals only with environmental impacts.

Moreover, Petitioners are simply incorrect in their dismissal of the environmental factors IEPA cites. First, Petitioners take issue with the water usage projected for coal washing at Prairie State by noting the potential for zero wastewater discharges and recycling of water at the plant. Petitioners fail to note that water used in coal washing goes into the fuel and pyritic waste. *See Evaluation of Coal Washing*, Chart at 2 (e.g., moisture of washed coal is increased by one percent over unwashed coal) (INTV Ex. 43). Thus, references to discharge rates and recycling fail to tell the whole story about water usage and water balance.

Petitioners also take issue with the amount of gob and slurry that must be disposed. They argue that it is no different from that at other facilities. Petition at 54 (citing United Mine Workers Comments). IEPA responded to this comment regarding comparative environmental impacts by noting these impacts could be avoided altogether at Prairie State.

In light of continuing scrutiny, coal washing cannot be considered a benign process from environmental perspective. Because of the presence of high-efficiency add-on controls, the proposed plant has the ability to avoid the environmental impacts associated with a coal wash facility. In addition the circumstances are not similar to the existing coal washing facilities as coal washing for the proposed plant would create new coal waste disposition sites or require closed disposal sites to be reopened.

RS No. 63 at 30 (INTV Ex. 4). Moreover, IEPA noted the ever-evolving nature of environmental concerns:

Finally, environmental concerns are not static and evolve as society becomes more aware of the risks to which it is subjecting itself. The fact that a certain practice was deemed environmentally acceptable in the past does not demonstrate that the practice should continue to be considered acceptable or innocuous and not subjected to closer scrutiny and care. In this regard, environmental groups are concerned not only about the emissions from coal-fired power plants, but also the environmental impacts from mining, washing and transporting coal, e.g., *Cradle to Grave*, The Environmental Impacts From Coal, Clean Air Task Force, 2001.

Id. at 32, No. 67.

4. IEPA carefully considered economic impacts in rejecting coal washing.

Petitioners argue that IEPA's economic analysis did not consider the benefits of reducing pollutants other than SO₂ (e.g., PM, mercury, and NO_x).⁴⁹ BACT is a pollutant-by-pollutant analysis. See 40 C.F.R. § 52.21(b)(12) (BACT is performed for *each* pollutant). Therefore, each pollutant is considered on its own merits. Moreover, as IEPA noted, Prairie State already has add-on controls that will provide far greater control of these pollutants as compared to coal washing. RS No. 57 at 27-28, No. 58 at 28 (INTV Ex. 4). Petitioners go on to suggest that coal washing would remove up to one million tons per year of PM and 179,389 tons/year of SO₂. The numbers quoted by Petitioners betray the fact that their arguments in favor of coal washing use a comparison to uncontrolled emissions, which fail to account for state-of-the-art pollution control technology required for Prairie State. The dry electrostatic precipitator alone removes 99.9 percent of the uncontrolled filterable emissions, leaving 980 tons/year. Permit Condition 2.1.7, Attachment 1, Table 1 (INTV Ex. 1). Therefore, coal washing cannot remove an additional 1 million tons of PM. Similarly, the scrubber alone removes 98 percent of uncontrolled SO₂ leaving 11,866 tons/year. *Id.* Therefore, coal washing cannot remove an additional 179,389 tons/year. These highly effective add-on control technologies for SO₂ and PM, which Petitioners ignore, are exactly why coal washing is not cost effective for Prairie State. See July 12 Tickner Letter at 42 (INTV Ex. 39).

⁴⁹ The *Foster Wheeler Passaic* case cited by Petitioners does not suggest combining pollutants for purposes of determining cost effectiveness. Rather, it requires that in evaluating each separate pollutant, the total volume of *each* pollutant is considered. The only pollutant at issue in *Foster Wheeler Passaic* was NO_x.

In sum, Petitioners point to no clear error on the part of IEPA in rejecting coal washing in the top-down BACT analysis for SO₂. For this reason, the decision not to require coal washing should be upheld.

X. IEPA APPROPRIATELY DETERMINED BACT FOR SO₂ EMISSIONS FROM PRAIRIE STATE.

Petitioners seek a remand of the Permit arguing that the emissions limits for SO₂ do not represent BACT. They argue specifically that IEPA failed to: (1) consider all control technologies; (2) establish limits based on a removal efficiency greater than 98 percent; (3) treat SO₂ and H₂SO₄ separately in the BACT analysis; (4) establish limits with shorter averaging times; and (5) establish a lower 24-hour SO₂ limit. Petitioners also criticize IEPA for various aspects of the minimum annual 98 percent removal efficiency that was adopted in response to public comments.

Petitioners disagree with IEPA's conclusions, but the Record shows that IEPA's analysis was thorough and its decisions were sound. IEPA devoted significant time and effort to carefully analyze Prairie State's SO₂ emissions controls. The Responsiveness Summary devotes 11 single-spaced pages in response to numerous comments on SO₂ BACT. The Record is filled with evidence to support each decision made by IEPA on this issue.

As explained in more detail below, IEPA considered all relevant control technologies and correctly determined the lowest limits that Prairie State can achieve continuously during the life of the Permit. IEPA persuasively demonstrated that Petitioners' short-term data and sketchy vendor information do not support lower limits for Prairie State. Moreover, IEPA conducted separate BACT analyses for SO₂ and H₂SO₄, and explained in the Responsiveness Summary the straightforward relationship between the two sulfur compounds. The averaging times and the 24-hour SO₂ limit in the Permit are rational and well documented. IEPA also was reasonable in adding a new BACT condition in the final Permit requiring a minimum 98 percent removal efficiency, regardless of the fuel burned.

A. IEPA Established Multiple SO₂ Limits In The Permit.

The Permit contains multiple limits on SO₂ emissions. IEPA determined BACT and the other limits based on the Application submitted by PSGC, the comments received during the public comment period, and its own research and analysis. Project Summary at 7-9 (INTV Ex. 2); Calculation Sheet at 8-10, Attachment 2.5 (INTV Ex. 3).

The Permit establishes two BACT requirements for SO₂ emissions. The first is a BACT limit of 0.182 lbs/mmBtu based on a 30-day rolling average. Permit Condition 2.1.2.b.ii.A (INTV Ex. 1). This limit is based on 98 percent removal efficiency for the design coal. In response to EPA and public comments on the draft Permit, IEPA added a BACT requirement of 98 percent annual removal efficiency for the coal actually burned, regardless of sulfur content. *Id.* at Condition 2.1.2.b.ii.B. This annual minimum removal efficiency supplements the 30-day BACT limit. *See* RS No. 99 at 46 (INTV Ex. 4).

The Permit also contains a 24-hour limit to assure that NAAQS and increment are protected. This short-term limit is initially set at 3,156 lb/hr, but will be lowered to 2,450 lbs/hr no later than 24 months after initial startup. Permit Condition 2.1.7.a.ii (INTV Ex. 1). The 2,450 lb/hr limit can be lowered further to 1,350 lbs/hr after three years based on the plant's actual performance. Permit Condition 2.1.16. PSGC is obligated to complete an evaluation of the daily SO₂ rate within three years (or four years, if IEPA grants a one year extension), or else the daily limit automatically defaults to 1,350 lbs/hr. *Id.* Finally, on top of the other limits, the Permit caps actual total emissions of SO₂ at 10,679 tons/yr through calendar year 2009 and 11,273 tons/yr in calendar year 2010. *Id.* at Condition 1.9. Thereafter, the total annual emissions are limited to 11,866 tons.

B. IEPA Considered All Relevant Control Technologies.

Petitioners point to three variations of wet scrubber technologies that IEPA allegedly failed to consider in the BACT analysis: magnesium-enhanced lime (“MEL”), the Chiyoda bubbling jet reactor, and miscellaneous “design enhancements.” Petition at 57-58. Petitioners argue that this represents a violation of Step 1 of the “top-down” BACT analysis and warrants a remand of the Permit. Petitioners are mistaken. As explained below, IEPA considered the capabilities of scrubber technologies and explained why these variations did not warrant a separate “exhaustive review.” Indeed, the Record provided IEPA with ample reason to reject the variants as a basis for lower BACT limits, even if it had not considered each one (which it did). *See, e.g., Mecklenberg Cogeneration*, 3 E.A.D. at 494 (“Simply because the permit issuer may not have identified, documented, or consulted every single potential source of information about the technologies in question does not mean, as Petitioner implies, that the resulting permit determination is defective, or that the rejection of the two technologies in question was not adequately justified. It is enough if the record as a whole reflects a reasoned analysis of current information about potentially available technologies.”) (footnote omitted).

IEPA provided a reasonable explanation why it treated wet scrubbers as a class of technology, rather than treating each vendor’s variation on the design as a separate technology necessitating “exhaustive review”:

The distinctions between different types of scrubber designs made in this [sic] comments are not relevant for the purposes of the BACT determination. Rather they reflect different designs of wet scrubbers or enhancements to a particular scrubber design. In this regard, commercially available scrubbing technologies for coal-fired boilers all rely on calcium (either, as present in limestone, CaCO_3 , or in lime (CaO) produced from limestone) as the chemical sink to react with SO_2 (and SO_3), ultimately forming gypsum (CaSO_4). The fundamental issue for wet scrubbers is setting the SO_2 emission rate or level of control efficiency that a scrubber must be designed to achieve.

RS No. 103 at 49 (INTV Ex. 4). Moreover, IEPA expressly found that it had established the BACT limit based on the most effective control system. *See id.* at 47, No. 101 (“The permit recognizes the use of wet scrubbing as BACT for SO₂. Scrubbers are routinely used on pulverized coal boilers that burn higher sulfur coals, which require highly effective add-on control for SO₂ emissions.... The BACT determination for SO₂ ultimately reflected the most effective control system deemed achievable.”). IEPA’s rationale is neither arbitrary nor capricious.

IEPA further disproved Petitioners’ suggestion that those design variations could continuously achieve SO₂ removal efficiencies greater than 98 percent. For instance, IEPA considered MEL in detail and concluded that the MEL data *supported* the BACT limit in the Permit. *See id.* at 46-47, No. 100 (noting, among other things, “it is unclear that the control system being pointed to [MEL] consistently achieved 98 percent control, even on an annual basis”).

In promoting specific vendors’ scrubber designs, Petitioners rely on and cite information from those vendors. *See* Petition at 57-58. IEPA repeatedly cautioned against blind reliance on the claims of vendors about the capabilities of their particular designs when establishing permit limits that must be met continuously. *See* RS No. 112 at 53 (INTV Ex. 4) (“A preliminary engineering evaluation from a vendor of control technology does not provide a reliable basis to set a BACT limit that goes beyond the demonstrated performance of the control technology. Moreover, undue emphasis is placed on MEL scrubbing as a means to improve control efficiency.”); *id.* at 55, No. 116 (vendor information does not provide reliable basis for setting BACT limits); *id.* at 61-62, No. 134; 71-72, No. 154 (noting the limited value of vendor guarantees when setting BACT limits); *id.* at 64, No. 137 (pointing out that vendors “do not

receive permits and are not subject to risk of enforcement if a control system fails to perform as predicted;” hence, preliminary vendor information “does not provide an adequate basis” to set a BACT limit).

The Record contains other evidence demonstrating that IEPA acted reasonably in its evaluation of scrubber technologies. With regard to the Chiyoda jet bubbling reactor, Prairie State solicited Chiyoda for a bid. Yet Chiyoda declined to offer a guarantee even at 98 percent removal efficiency. *See* PSGC Response to Fox Comments at 30-31 (INTV Ex. 39). Thus, this technology was neither available nor the “top technology” under BACT. With respect to “other design enhancements” cited by Petitioners, the Record reflects that those technologies are used in the event of malfunctions “and are not for normal or continued use.” *Id.* at 32; *see also Mecklenburg Cogeneration*, 3 E.A.D. at 494 n.3 (“A rule of reason proportionate to the technology’s track record necessarily governs how much detail and documentation must go into consideration of a particular technology.”).

In sum, it is plain that IEPA did not commit clear error in its evaluation of control technologies for SO₂.

C. IEPA Utilized The Appropriate Control Efficiency in Setting BACT for SO₂.

Petitioners argue that the 98 percent removal efficiency is not high enough to represent BACT. Petitioners contend that “substantial evidence” exists to demonstrate the achievability of 99 percent removal. Petition at 58-59.

The Board should reject this argument for two reasons. First, Petitioners misunderstand the standard of review in this proceeding — it is insufficient for Petitioners to present “substantial evidence” in support of *their* position; rather, they must demonstrate that EPA *lacked* evidence to support *its* decision and that Petitioners’ evidence clearly outweighs IEPA’s

evidence (*i.e.*, IEPA's determination was clearly erroneous). *See Steel Dynamics*, 9 E.A.D. at 185 ("Petitioners, as proponents of a permit provision that is different from that adopted by the permit issuer, have the burden of demonstrating clear error or abuse of discretion in IDEM's decision."). Second, IEPA presented overwhelming evidence that the data on which Petitioners rely do not support the long-term achievability of a removal efficiency greater than 98 percent. The Record establishes that none of Petitioners' "evidence" is a reliable basis to overturn the BACT determination.

1. Ninety-eight percent is the highest achievable removal rate.

IEPA carefully reviewed the information presented in public comments suggesting that a removal efficiency higher than 98 percent is achievable. However, IEPA properly concluded that the information suggesting a higher removal efficiency was based on short-term tests that did not represent long-term achievability and, therefore, should not be the basis for a BACT determination:

This comment does not provide an adequate basis to set a BACT limit for SO₂. It shows that modern controls can frequently achieve very high levels of SO₂ control on a short-term basis. On a long-term basis, they also perform well. However, the data does not show that they can reliably achieve greater than 98 percent control.

RS No. 111 at 53 (INTV Ex. 4). IEPA further provided detailed responses to the information presented in the individual comments about higher removal efficiencies. *See, e.g., id.* at 52-55, Nos. 109-110, 112, 114-116.

Petitioners take issue with IEPA's characterization of 99 percent removal efficiency as "theoretical." Petition at 59. Yet, IEPA's conclusion is patently reasonable. As noted above, the short-term performance data from a few selected facilities does not translate into reliable, consistent, long-term performance. RS No. 111 at 53 (INTV Ex. 4); *see also* RS No. 230 at 104,

No. 241 at 109 (explaining problems with trying to translate short-term performance data into long-term BACT limits). In addition, at these high levels of removal, a safety factor is especially important:

In addition, 99 percent removal is considered a theoretical limit. It would require the scrubbers to be operated on a continuing basis, to achieve an SO₂ emission rate to the atmosphere that is half the emissions rate being required with 98 percent control efficiency. It clearly would not provide the safety factor for compliance that is appropriate for a BACT limit.

Id. at 53, No. 110. The safety factor (or margin of safety) must also take into account the specific source, because BACT is a case-by-case analysis. *See id.* at 47, No. 100 (“Even assuming that the cited control efficiency was widely recognized as the requisite BACT performance level, it is often appropriate for a permitting authority to set a limit that will allow a source to achieve compliance on a consistent basis, provided that the underlying control technology is properly operated and maintained.”). The Board has repeatedly recognized the appropriateness of a safety factor. *See, e.g., Masonite.*, 5 E.A.D. at 560-61; *Knauf II*, 9 E.A.D. at 15; *Three Mountain Power*, 10 E.A.D. at 53.

Petitioners also cite a recent statement by EPA in the *Federal Register* that SO₂ removal efficiencies have been demonstrated above 98 percent on an annual basis. Petition at 58. This citation does not show any error by IEPA. First, EPA’s full discussion actually supports IEPA’s decision. Petitioners omit the qualifications preceding EPA’s reference to 98 percent removal: “The SO₂ removal efficiency that a wet FGD system can achieve for a specific steam generating unit is affected by the sulfur content of the fuel burned..., and site-specific scrubber design parameters....” 70 Fed. Reg. 9706, 9711 (Feb. 28, 2005) (emphasis added). BACT is a case-by-case analysis, and IEPA was keenly aware of the high sulfur content of Prairie State’s fuel.

Second, EPA was referring to *annual* removal efficiencies. Prairie State's primary BACT limit is based on a 98 percent removal efficiency of design basis coal over a 30-day rolling period, supplemented by an annual 98 percent removal efficiency for any coal. IEPA recognized that shorter averaging times require greater room for variability. RS No. 99 at 46 (INTV Ex. 4). Accounting for the increased variability, the 98 percent annual efficiency cited by EPA would translate into roughly a 97 percent removal efficiency on a 30-day basis. *Id.*

Finally, there is no indication in the *Federal Register* that EPA believed a facility could achieve greater than 98 percent removal on a *continual* basis under all reasonably foreseeable conditions, as would be required to avoid an enforcement action. Indeed, to meet a permit limit set at 98 percent at all times, a plant would have to be designed to meet a higher removal efficiency during normal operation. See Hendrickson Email at 1 ("A firm permit limit of 0.03 would actually require a limit be designed to achieve a level below the 0.03 level with a margin of error.") (INTV Ex. 24).

2. The Mitchell performance data do not rebut IEPA's determination.

Petitioners highlight some selective data from the Mitchell plant as evidence that IEPA erred in establishing BACT based on 98 percent removal. Petition at 60-61. The four months of data is more than 20 years old,⁵⁰ was excerpted from an 18-month demonstration period, and was collected pursuant to a consent decree. See RS No. 115 at 55 (INTV Ex. 4). Upon receiving Petitioners' comments about Mitchell, IEPA undertook an independent investigation and provided the following cogent response:

⁵⁰ If Petitioners were correct that somehow these data points establish BACT for SO₂ at over 99 percent removal, then presumably every SO₂ BACT determination for a coal-fired plant over the past 20 years is clearly erroneous.

This historical data does not provide an adequate basis to set a limit for the proposed plant for scrubber efficiency at greater than 98 percent. Further review of the circumstances under which this data was collected, as also provided by the commenter, show that this data was collected as part of an 18-month demonstration period for the unit under a consent decree. Pursuant to the decree, the source was only required to install a scrubber with 95 percent efficiency and comply with an SO₂ emission rate of 0.45 lb/mmBtu. The data for the unit for 2004 collected under the Acid Rain program shows that the unit is currently emitting approximately 0.166 lb/SO₂/mmBtu, which is lower than 0.45 lb/mmBtu but much higher than the emission data provided for the demonstration period. Based on the sulfur content of coal during the demonstration period, the actual control efficiency of the scrubber is in the range of 97 to 98 percent.

Id. The current data not only support the Permit limit, they also illustrate the danger of using short-term performance data to establish long-term limits without safety factors.

IEPA had numerous other reasons to reject the suggestion that the Mitchell data support a limit based on 99 percent removal. Mitchell employs Carmeuse's MEL scrubber design. Petition at 60. IEPA concluded that the information about MEL performance supports the BACT limit in the Permit. *See* RS No. 100 at 46-47; No. 112 at 53 (INTV Ex. 4). In fact, IEPA was aware that Carmeuse has a history of selectively manipulating its data when submitting comments to permitting authorities. *See* PSGC Response to Fox Comments at 31-32 (INTV Ex. 39) (providing documents showing that Carmeuse had claimed its MEL data reflected 98.4 percent removal in comments to IEPA, while providing later data from same plant that reflected only 97.7 percent removal in comments to West Virginia DEP).⁵¹ *See also Hawaii Elec. Light*, 8 E.A.D. at 90-91 ("Where a control option has been evaluated or rejected, those favoring the

⁵¹ It is certainly curious that the MEL scrubber at Mitchell allegedly was able to remove in excess of 99 percent in 1983 and 1984, while Carmeuse is now claiming just the ability to achieve 98+ percent annual removal 20 years later. *See* RS No. 100 at 46-47 (INTV Ex. 4).

option must show that the evidence 'for' the control option *clearly outweighs* the evidence 'against' its application.") (emphasis in original) (citations omitted).

In sum, the 20-year-old, short-term data from Carmeuse do not support a conclusion that IEPA committed clear error.

3. The Longview limit is not inconsistent with IEPA's BACT determination.

Petitioners rely on a hearsay conversation by their consultant to claim that IEPA erroneously calculated the SO₂ removal efficiency for the BACT limit in the Longview (West Virginia) permit. Petition at 61-62. The evidence in the Record indicates that Petitioners, not IEPA, are mistaken.

First, West Virginia itself contradicts Petitioners' claim. See West Virginia DEP, "Addendum to Preliminary Determination/Fact Sheet, Longview Power, LLC," Permit No R14-0024, Dec. 4, 2004 (http://www.dep.state.wv.us/docs/4660_Longview-Addendum-Ed1.pdf) (cited in Petition at 62 n.37) (INTV Ex. 47). According to the document cited by Petitioners, 98 percent reduction at Longview would equate to a limit of 0.075 lb/mmBtu. *Id.* at 5. Thus, IEPA did not calculate Longview's removal efficiency as Petitioners contend. Instead, West Virginia DEP performed the calculation. Based on West Virginia's calculation, IEPA correctly concluded that Longview's final permit limit (pursuant to a consent decree) of 0.095 lb/mmBtu reflected less than 98 percent control. See RS No. 122 at 57 (INTV Ex. 4).

Second, Prairie State obtained the actual coal quality data from Longview and submitted the sulfur content to IEPA. See Response to Fox Comments, Att. 6 (Email from Chris Colbert, Longview, to Dianna Tickner (April 8, 2004, 5:36 a.m.)) ("Longview Coal Quality Email") (INTV Ex. 39); see also Email from Dianna Tickner, PSGC, to Chris Romaine and Sashi Shah, IEPA, regarding Coal Quality from WE Energy Elm Road and Longview Power (May 11, 2004,

9:50 a.m.) (INTV Ex. 48). These data in the Record further support IEPA's conclusion that the final Longview removal efficiency was less than Prairie State's.

Finally, even if Petitioners were correct (which they are not) that Longview's removal efficiency is better than Prairie State's, this does not render IEPA's BACT determination clearly erroneous. *See Steel Dynamics*, 9 E.A.D. at 188 ("Permit agencies have discretion to set BACT limits at levels that do not necessarily reflect the highest possible control efficiencies but, rather, will allow permittees to achieve compliance on a consistent basis."); *see also BP Cherry Point*, slip op. at 31-32 ("BACT analysis is, at its core, a source-specific exercise"). The Record reflects substantial evidence in support of the SO₂ BACT limits in the Permit, including key differences between Longview (relatively low sulfur) and Prairie State (high sulfur). *See* Longview Coal Quality Email (INTV Ex. 39).

4. The Chiyoda bubbling jet reactor does not support a removal efficiency above 98 percent.

Petitioners argue that the Permit is defective because the Chiyoda jet bubbling reactor has been guaranteed to achieve 99 percent SO₂ removal on three facilities. Petitioners also rely on "technical articles" from the vendor to support their statement that the jet bubbling reactor has consistently achieved greater than 99 percent SO₂ control. Petition at 62. Petitioners' arguments about the jet bubbling reactor suffer from a myriad of flaws.

As noted earlier, PSGC approached Chiyoda and sought a guarantee of 98 percent or better, and Chiyoda declined. *See* Response to Fox Comments at 31-32 (INTV Ex. 39). Under BACT, it would be inappropriate for IEPA to establish a limit based on a technology that a vendor declines to provide. Moreover, a vendor's promotional literature or "technical articles" must be considered with caution. *See* RS No. 112 at 53 (INTV Ex. 4). And, vendor guarantees likewise do not establish BACT. *Id.* at 64, No. 137.

Consequently, Petitioners' reliance on information from Chiyoda — especially when Chiyoda refused to offer its jet bubbling reactor to Prairie State at the required levels — cannot render IEPA's determination arbitrary and capricious.

D. IEPA Handled SO₂ and H₂SO₄ Properly In The BACT Analysis.

Petitioners offer the puzzling argument that IEPA improperly considered SO₂ and H₂SO₄ mist in a single BACT analysis. The Record provides compelling support for IEPA's approach:

The nature and relationship between emissions of SO₂ and sulfuric acid mist are such that the BACT analysis was properly performed. In addition, the permit also reflects an appropriate determination of BACT for SO₂ and sulfuric acid mist with appropriate limits established for both pollutants.

In this regard, both SO₂ and sulfuric acid mist have the same origin, i.e., sulfur contained in the coal supply to the boilers, which is oxidized during combustion. Control measures that are effective in controlling SO₂ emissions also control sulfuric acid mist emissions. SO₂ and sulfuric acid mist differ as sulfuric acid mist reflects the further oxidation of a smaller amount of the SO₂ that is formed during combustion, from SO₂ and SO₃, a process that continues as long as SO₂ is present in the flue gas (and then continues in the atmosphere). Sulfuric acid mist is formed in the boiler when the SO₃ combines with moisture. Accordingly, the "basic" control of these pollutants can be looked at in coordinated fashion, in terms of SO₂, followed by consideration of whether further controls beyond those for SO₂ are appropriate specifically for emissions of sulfuric acid mist.

The evaluation of the basic control of these pollutants, in terms of SO₂, is addressed extensively in response to other comments. Wet scrubbing is the most effective add-on control device for emissions of SO₂.

For sulfuric acid mist, there are three basic control techniques: (1) introduction of various additives into the furnace or combustion chamber of the boiler, which act to inhibit the formation of SO₃ and absorb sulfuric acid mist that is formed; (2) injection of various sorbents into the flue gas to absorb and collect SO₃ and sulfuric acid mist as a solid with the primary particulate matter control device; and (3) use of a wet electrostatic precipitator (WESP) as the final unit in the add-on control train of the boiler to

specifically collect and neutralize SO₃ and sulfuric acid mist as a liquid. Of these techniques, the use of a WESP is considered the most effective, e.g. it is commonly used on plants producing sulfuric acid commercially. In addition, WESP are preferable for control of sulfuric acid mist, as they are considered more effective than either fabric filters or dry electrostatic precipitators for control of fine particulate matter.

The BACT emission limit set for sulfuric acid mist, 0.005 lb/million Btu, is identical to the limit set for Wisconsin Public Services Weston 4 project, and more stringent than the limits set for Longview Power (0.0075 lb/million Btu) and Wisconsin Electric's Elm Road Plant (0.010 lb/million Btu).

Id. at 48, No. 102.

Moreover, despite Petitioners' allegations to the contrary, IEPA established separate BACT limits for both SO₂ and H₂SO₄. The Record contains ample discussion of the control technologies for H₂SO₄ and SO₂. In fact, both the Project Summary and the "Technical Review" of the Permit make clear that IEPA considered BACT for *each* pollutant individually. See Project Summary at 7-8 (BACT for SO₂), 11-12 (BACT for H₂SO₄) (INTV Ex. 2); Calculation Sheet at 8-10 (BACT analysis for SO₂) and 10-11 (BACT analysis for sulfuric acid mist) (INTV Ex. 3). The Project Summary and the Calculation Sheet contain precisely the BACT information that Petitioners argue is missing. Thus, Petitioners' argument is simply wrong.

E. The Permit Limits Contain Appropriate Averaging Times For SO₂.

The Petition contains several arguments that IEPA failed to use appropriate averaging times for the SO₂ limits. Petitioners argue that: (1) the Permit must have 3-hour, 24-hour, and annual BACT limits to protect NAAQS and increment; (2) the 24-hour limit allows "excess variability"; and (3) the averaging times must be consistent with compliance methods. Because IEPA had a rational basis for each of the averaging times in the Permit, the Board should decline review of these claims.

1. The averaging times in the Permit are sufficient to protect NAAQS and increment.

Petitioners contend that IEPA failed to protect NAAQS and increment with the averaging times in the Permit. Specifically, Petitioners argue that the Permit does not contain 3-hour, 24-hour, and annual BACT limits corresponding to each of the air quality standards. Petition at 63-64. Petitioners are both legally and factually wrong.

First and foremost, IEPA made a determination after an extensive analysis that the existing limits protect all of the NAAQS and increments. *See, e.g.*, Project Summary at 15-26 (INTV Ex. 2). Thus, it was unnecessary to establish additional BACT limits for that purpose.

Second, the Permit contains a 30-day SO₂ BACT limit.⁵² Nothing in the definition of BACT or elsewhere in the regulations requires IEPA to establish multiple BACT limits for a single pollutant. *See* CAA § 169(3) (definition of BACT). Petitioners have cited no precedent to the contrary.

Third, the Permit contains a 24-hour SO₂ limit that was established specifically to protect air quality standards. *See* RS No. 266 at 120-21 (INTV Ex. 4). Because it was established to protect short-term NAAQS and increments, it does not represent a BACT limit. The modeling and culpability analysis demonstrate that the 24-hour limit is sufficient to serve its purpose: the 24-hour limit protects both the 24-hour and 3-hour NAAQS and increments. *See* Project Summary at 17-23 (Jan. 14, 2004) (INTV Ex. 2); EarthTech, “Addendum: Updated Class I Increment Analysis and Calculation of Maximum Compliant Emission Rate” (Jan. 14, 2004) (INTV Ex. 49).

⁵² The final Permit also added a requirement that Prairie State meet 98 percent removal efficiency on annual basis. This supplements the 30-day BACT limit. *See* RS No. 99 at 46 (INTV Ex. 4). Thus, Petitioners are mistaken when they argue that the Permit lacks an annual SO₂ BACT limit.

In sum, the Permit protects all the NAAQS and increments for SO₂. BACT does not provide any basis for requiring different averaging times once this demonstration is made.

2. The 24-hour limit is appropriate.

Petitioners argue that the 24-hour limit allows “excessive variability” of SO₂ emissions. This issue does not warrant review. Procedurally, Petitioners have not shown that this issue was raised during the public comment period, and, therefore, the Board should not entertain it. *See* 40 C.F.R. §§ 124.13, 124.19. Substantively, Petitioners fail to cite any legal requirement that restricts “variability” if the limit is otherwise valid. Its very existence restricts variability. As written, the 24-hour limit protects short-term air quality standards, and serves its lawful purpose. It is also supported by information in the Record. *See* Email from D. Tickner to C. Romaine, R. Kaleel, and S. Shah (Oct. 28, 2003, 8:16 a.m.) (INTV Ex. 40) (submitting J. Edward Cichanowicz, *Application of Long-term Averaging Data to Project SO₂ and NO_x Emissions Targets from the Proposed Prairie State Generating Station*).

3. IEPA’s rationale for establishing a 30-day BACT limit was reasonable.

Petitioners criticize a statement in IEPA’s Project Summary that the 30-day averaging time is consistent with the format used by “many other states in setting BACT for coal-fired utility boilers.” Project Summary at 9 (INTV Ex. 2). This provides no basis for the Board to grant review. Petitioners have not shown this issue was raised during the public comment period, and, thus, the Board should not consider it. Moreover, Petitioners selectively quote IEPA. In fact, IEPA also said the 30-day averaging time is consistent with “the format used by USEPA in the NSPS.” *Id.*; *see also* RS No. 141 at 66 (INTV Ex. 4) (30-day is the “most common form” and it is “identical to the time period used by USEPA for NO_x and SO₂ emission standards in the NSPS,” in addition to having the benefit of reducing the safety factor otherwise

required with daily limits). In any event, Petitioners offer no legal basis to reject a 30-day averaging time as unlawful.

4. **BACT does not require 3-hour or 15-minute limits.**

Petitioners argue that BACT requires averaging times to be set “consistent with established reference methods.” Petition at 66 (citing Draft NSR Manual at B.56). They then suggest that 3-hour and 15-minute averaging times are necessary to be consistent with Method 19 and with CEMS measurements.

These arguments are meritless. The reference in the NSR Manual appears in the section entitled “Enforceability of BACT.” Draft NSR Manual at B.56 (INTV Ex. 22). CEMS themselves assure compliance with the limits in the Permit and render the Permit limit enforceable.⁵³ The suggestion that BACT requires all permits to contain both 3-hour and 15-minute SO₂ limits ignores reality.

The averaging times in the Permit comply with all legal requirements. The Board should not grant review on the issue.

F. The Annual 98 Percent Removal Efficiency Is An Appropriate Requirement.

Although IEPA added the requirement of 98 percent SO₂ control in response to public comments, Petitioners argue that adopting this condition “does not end IEPA’s inquiry.” Petition at 66. They contend that the condition: (1) is not practically enforceable; (2) takes effect too late after initial startup; and (3) does not make the 30-day BACT limit more stringent. These arguments provide no legal basis to grant review.

⁵³ The NSPS are determined by Method 19 and CEMS and are based on 30 days. No one can seriously contend that the NSPS are unenforceable.

IEPA explained at length its rationale for both the 98 percent requirement and the rolling

12-month averaging time:

Upon further review, BACT for SO₂ for the coal-fired boilers has been supplemented with a requirement for 98 percent control of SO₂ emissions, as recommended by this comment.

Given the nature of the performance data from existing power plants upon which the value for this efficiency limit is based, this limit has been applied on an annual basis (running total of 12 months of data). In addition, there were concerns about correlating SO₂ emissions data collected by continuous emissions monitoring with data for sulfur content of the coal supply, given the very high level of control that is being required. In this regard, the SO₂ efficiency of scrubbers is routinely determined from uncontrolled emissions calculated from the sulfur content of the fuel supply. This form of data, as must already be collected pursuant to the NSPS for coal-fired boilers, is the basis for actual data on the performance of SO₂ scrubbers relied upon by the Illinois EPA in setting the 98 percent control efficiency requirement for the scrubbers.

There was also a desire to have an actual level of performance for the SO₂ scrubbers that approaches the limit, without an even larger margin of safety, as needed with even a limit that is applicable on a monthly basis to account for normal variability in operation and performance of control systems when considered on a shorter time period. The data compiled by the USFWS indicates that a control efficiency requirement applied on a 30-day average would have to allow about 50 percent more SO₂ emissions than the annual limit that is being set, that is, an SO₂ control efficiency limit of about 97 percent, rather than the required control efficiency of 98 percent.

RS No. 99 at 46 (INTV Ex. 4).

IEPA was thoughtful and reasonable in establishing this new condition in response to public comments.⁵⁴ Petitioners' arguments do not demonstrate any arbitrariness by IEPA.

1. The 98 percent removal efficiency is practically enforceable.

Petitioners allege that the new condition is not practically enforceable. This is wrong. The Permit contains record keeping requirements and specifies precisely how to calculate the removal efficiency. *See* Permit Conditions 2.1.2.b.ii.B, 2.1.11.c.ii.B. As a result, compliance at any given time can be readily ascertained for the preceding twelve month period.

2. It is rational to make the 98 percent removal efficiency become effective 18 months after initial startup.

Petitioners prefer that the 12-month control efficiency requirement begin immediately upon the initial startup. Petitioners' preference does not render IEPA's decision arbitrary or capricious. IEPA had a rational basis for its decision to allow an initial six-month optimization period before the removal efficiency requirement commences.⁵⁵

The six-month optimization period is consistent with the period allowed by NSPS to get the plant operating properly. *See* 40 C.F.R. Part 60, Subpart Da. Moreover, the optimization

⁵⁴ Exhibits submitted with Petitioners' comments also support IEPA's inclusion of a 98 percent limit and indicate that it is very stringent. *See* Comments of Sierra Club Prepared by Phyllis Fox, Ex. 20A (June 21, 2004) (INTV Ex. 50). Exhibit 20A provides SO₂ emissions data compiled by Don Shepherd of the NPS. The annual data indicates that only one facility has achieved or is permitted for a higher removal efficiency than 98 percent (the Harrison facility for the year 1997). *Id.* As discussed above, the Harrison facility has not been able to maintain that level of removal efficiency and has dropped below 98 percent for the past few years — *e.g.*, in 2002, the removal efficiency was 97.7 percent. The facility with the next highest removal efficiency according to Mr. Shepherd is the proposed Longview plant at 97 percent.

⁵⁵ The condition becomes effective 18 months after initial startup. *See* Permit Condition 2.1.2.b.ii.B (INTV Ex. 1). Thus, the backward-looking, 12-month rolling average begins calculating removal efficiencies six months after startup. The requirement applies continuously thereafter, including during malfunction, startup, and shutdown. *Id.*

period does not threaten air quality. The removal efficiency condition is not the primary SO₂ BACT limit; it supplements the primary 30-day limit. *See* RS No. 99 at 46 (INTV Ex. 4). Finally, the Permit contains special caps on total SO₂ emissions during the initial years of operation. *See* Permit Condition 2.1.7.b.ii (INTV Ex. 1). This gives IEPA additional comfort that allowing a reasonable optimization period will not threaten air quality.

3. A minimum removal efficiency makes BACT more stringent.

Petitioners argue that the annual minimum removal efficiency does not make BACT stricter. Even if true, it is not an “error” that warrants review. Ninety-eight percent is itself a strict limit. *See* RS No. 99 at 46 (INTV Ex. 4). In addition, common sense dictates that any additional condition renders the Permit more stringent. It certainly does not nullify any other limits in the Permit, and Petitioners do not suggest that this new condition weakens the Permit.

IEPA explained its rationale for setting the removal efficiency condition at 98 percent averaged over 12 months. Nothing in Petitioners’ argument casts doubt on the reasonableness of IEPA’s decision.

XI. IEPA'S DECISION TO REJECT THE FLM'S ADVERSE IMPACT FINDING WAS RATIONAL.

Petitioners argue that IEPA's decision to reject the FLM's⁵⁶ adverse impact finding with respect to the Mingo Class I area was unlawful, unreasonable, and arbitrary. Petition at 69. That argument is contrary to the facts in the Record. The Record reflects that IEPA carefully considered all the information and reasonably concluded that the FLM had not demonstrated that emissions from Prairie State would cause an adverse impact on air quality related values ("AQRVs"), including visibility, at Mingo. IEPA found that the analyses performed by PSGC more accurately reflected the impacts at Mingo than the FLM's analysis in light of the regulatory definition of "adverse impact on visibility." Petitioners disagree with IEPA's decision, but they fail to show that it was unlawful, unreasonable, or arbitrary. Disagreement is not sufficient to warrant review.

A. IEPA Considered the Information in the Record and Reasonably Concluded There Would Be No Adverse Impact on Mingo.

Where, as in this case, there is no exceedance of the Class I increments, the FLM has the burden of demonstrating to the satisfaction of the state an adverse impact on AQRVs of the Class I area. CAA § 165(d)(C)(ii). The FLM failed to meet its burden in demonstrating to IEPA that emissions from Prairie State will have an adverse impact on AQRVs at Mingo. IEPA clearly articulated its rational basis for rejecting the FLM's finding. *See, e.g.*, RS No. 306 at 142-44 (INTV Ex. 4); Project Summary at 23-26 (INTV Ex. 2); Letter from Laurel Kroack, IEPA, to Paul Hoffman, FLM (Jan. 13, 2005) ("Kroack Letter") (INTV Ex. 51). It is undisputed that a

⁵⁶ In this instance, the FLM is the Assistant Secretary of Interior for Fish and Wildlife and Parks acting with support from the United States Fish and Wildlife Service ("FWS") of the United States Department of Interior.

permitting agency may reject an FLM's adverse impact finding if the permitting agency has a rational basis. *Petition at 71; Hadson, 4 E.A.D. at 276.* That is precisely what occurred in this case.

An adverse impact on visibility is defined as:

visibility impairment which interferes with the management, protection, preservation, or enjoyment of the visitor's visual experience of the Federal Class I area. This determination *must* be made on a *case-by-case* basis taking into account the geographic extent, intensity, duration, frequency and time of visibility impairment, and how these factors correlate with (1) times of visitor use of the Federal Class I area, and (2) the frequency and timing of natural conditions that reduce visibility.

40 C.F.R. § 52.21(b)(29) (emphasis added). In reaching its conclusion that emissions from Prairie State would not have an adverse impact on Mingo, IEPA considered all the information and made a case-by-case decision that took into account the factors listed in the definition and how they correlated with times visitors were allowed in Mingo and natural conditions (*e.g.*, weather) that reduce visibility.

The FLM, on the other hand, consistently took the position that the Class I analysis must follow FLAG⁵⁷ without deviation or consideration of site-specific factors. *See, e.g.*, Email from Bud Rolofson, FWS, to Rob Kaleel, IEPA (May 30, 2003 at 4:16 p.m.) (INTV Ex. 52).⁵⁸ Such a position is contrary to the definition of adverse impact on visibility, which clearly requires a case-by-case analysis.

⁵⁷ FLAG is short for Federal Land Managers' Air Quality Related Values Workgroup Phase I Report. FLAG is guidance that was developed to provide a consistent approach for evaluating air pollution effects on Class I areas. 66 Fed. Reg. 382 (January 3, 2001).

⁵⁸ PSGC responded to the concerns raised by Mr. Rolofson regarding the Class I modeling protocol. *See* Letter from Dianna Tickner, PSGC, to Rob Kaleel, IEPA, re: Prairie State CALPUFF Protocol (June 16, 2003) (INTV Ex. 91).

The process and analyses that led to IEPA's decision to reject the FLM's adverse impact finding, as reflected in the Record, are set forth below. Clearly, IEPA did not arrive at its decision to reject the FLM's finding lightly.

1. IEPA prompted the Class I analysis.

The original Application submitted by PSGC in October 2001 did not address Class I areas. In comments on that Application, IEPA indicated that the Mingo FLM should be notified and Class I modeling performed. Letter from Don Sutton, IEPA, to Lars Scott, PSGC (January 25, 2002) (INTV Ex. 46) (indicating the October 2001 Application was incomplete). Consistent with the guidance in 40 C.F.R. Part 51, Appendix W and at the instigation of IEPA, PSGC arranged for a conference call with IEPA, FWS and PSGC on April 9, 2002 to discuss possible impacts on Class I areas and the modeling protocol for predicting impacts. *See* Summary of the April 9, 2002 conference call (INTV Ex. 53). During the call, FWS requested a copy of the October 2001 Application and all future Applications. *Id.* at 4. IEPA committed to providing a copy. *Id.*; RS No. 311 at 146 (INTV Ex. 4). Additional calls and meetings were held with IEPA and FWS to discuss issues and concerns throughout the process. Work on modeling and inventory confirmation continued through early 2003.

2. PSGC performed the required modeling and conducted additional analyses to assess impacts on Mingo.

PSGC retained Mr. Joe Scire to assist in the Class I visibility and increment modeling work.⁵⁹ Mr. Scire prepared the protocol for the Class I modeling that was submitted to IEPA and FWS in March 2003. On July 8, 2003, PSGC submitted modeling performed by Mr. Scire that

⁵⁹ Mr. Scire is a meteorologist and an expert in the field of atmospheric modeling of pollutant fate and transport. He developed the software endorsed and used by EPA and FWS to model air quality impacts of emissions to demonstrate impacts on visibility and compliance with standards in Class I areas.

assessed Class I increment consumption and impacts on AQRVs, including visibility. *See* Application of CALMET and CALPUFF to Assess the Impacts of the Proposed Prairie State Generating Station at the Mingo Wilderness Area (July 2003) ("Class I Analysis") (INTV Ex. 55).

With respect to Class I increment consumption, except for SO₂, Prairie State did not consume increment above the Class I SILs, so further modeling was not required. *Id.* at 5-1; *see* Draft NSR Manual at C.24-C.25 (INTV Ex. 22); *Hudson*, 4 E.A.D. at 261 n.5 (approving the use of SILs in Class I area); Project Summary at 22-23 (INTV Ex. 2); RS No. 304 at 141 (INTV Ex. 4). Mr. Scire conducted cumulative SO₂ increment modeling that was submitted in August 2003 demonstrating that the Class I SO₂ increments also were not exceeded. *See* Addendum: Cumulative Impact Analysis Prairie State Generating Station (Aug. 2003) (INTV Ex. 56) (transmitted again to FWS along with the Class I Analysis in September 2003) ("Addendum I"). This determination was again verified in the July 2004 increment analysis that was conducted with revised inventories and a short-term SO₂ emissions rate. Modeling Addendum 2, § 4.2.

For impacts on visibility at Mingo, Mr. Scire modeled four site-specific cases, each building on the results from the previous case(s). *See* Class I Analysis at 5-1 to 5-8 (INTV Ex. 55). Each of the cases refined the model to more accurately reflect true impacts, and each refinement was based on sound scientific principles or authorized by regulation. *Id.*; Class I Air Quality Modeling Protocol (March 2003) (INTV Ex. 54) ("Class I Protocol"); *see* also 40 C.F.R. § 52.21(b)(29).

Case I was a generalized run adjusting the default Rayleigh scattering extinction, which varies with elevation, for Mingo's actual elevation. Class I Protocol 4-13 to 4-14 (INTV Ex. 54) (the default Rayleigh scattering extinction is based on an elevation of 5000 feet.). Using the

adjusted Rayleigh scattering extinction more accurately reflects effects at Mingo, which is 500 feet above sea level. *Id.* In Case II, Mr. Scire used the ammonia limiting method instead of the general method. The general method assumes an infinite amount of ammonia such that none is consumed by reaction. Although unrealistic, the general method is the simplest manner in which to perform the analysis. The ammonia limiting method more accurately reflects what is happening in the atmosphere and how much ammonia is available to react and produce chemicals that impair visibility, thus providing a more realistic estimation of effects. In Case III, Mr. Scire considered inclement weather, which is consistent with the regulatory definition of adverse impact. 40 C.F.R. § 52.21(b)(29); *see also* Letter from Judge Craig Manson, FLM, to Jan Sensibaugh, Montana Dept. of Env. Quality (Jan. 10, 2003) (INTV Ex. 57). Finally, in Case IV, Mr. Scire took into account visitor use of Mingo, which also is consistent with the regulatory definition of adverse impact. *See* 40 C.F.R. § 52.21(b)(29). Mingo is only open from one hour before sunrise to one-half hour after sunset. Based on Case IV, Mr. Scire predicted that, over a period of three years, only one day would exceed 10 percent visibility impact (12.1 percent) with three other days over 5 percent but less than 10 percent. Class I Analysis at 5-2 (INTV Ex. 55).

In addition to Mr. Scire's modeling, PSGC also submitted reports by Dr. Ivar Tombach on visibility and human perception and Dr. James Kramer on acid deposition and the buffering effects of native soils. Dr. Tombach concluded that for conditions at Mingo, a 20 percent change in extinction is needed to be discernable to humans. Tombach Report on Human Perception at 3 (INTV Ex. 37). Dr. Kramer concluded that, because of the natural buffering capacity of the soils, sediment, and bedrock at Mingo, "there would be a non-detectable change in precipitation chemistry and in the surface water acid-base chemistry with the additional deposition

contribution from Prairie State Generating Station.” Aquatic Assessment of Mingo Wildlife Area (MWA) at 10 (Aug. 1, 2003) (INTV Ex. 60).

In the fall of 2003, IEPA indicated to PSGC the need for a short-term SO₂ limit to ensure compliance with the short-term NAAQS and increment. Additional Class I increment consumption modeling was provided in January 2004 to address that issue. PSGC had previously provided an analysis as to why the short-term limit should not be used in the visibility analysis. *See* December 9, 2003 Submission, Modeling Addendum 1 at 12-14 (INTV Ex. 61). The analysis assessed how frequently Prairie State could emit at the short-term SO₂ limit while still achieving the 30-day rolling average limit and concluded that the frequency was one day out of thirty. Combining that maximum possible frequency with the frequency of meteorological conditions that result in an extinction greater than 5%, PSGC determined that the probability of Prairie State emitting at the maximum short-term rate coinciding with the worst-case meteorological conditions was 0.015 percent, or one day every 18 years.⁶⁰ Such a rare occurrence does not justify performing the visibility modeling using the short-term emission rate. IEPA concurred. RS No. 306 at 142-44 (citing Kroack Letter) (INTV Ex. 4); Kroack Letter at 7 (INTV Ex. 51).

3. The FLM did not provide a rational basis for rejecting PSGC’s analysis.

FWS commented on PSGC’s analysis by providing IEPA information on January 15, 2004 for the public notice. FWS indicated that it was concerned that the plant would cause an adverse impact at Mingo. FWS followed its January 15 submission with a letter on March 19,

⁶⁰ This analysis assumed that Prairie State would emit continuously at the maximum short-term emission rate of 3,126 lb/hr, which is unlikely to occur given the 30-day rolling average limit of 0.182 lb/mmBtu and the 98 percent annual removal efficiency limit.

2004, reiterating its concern but providing no additional analysis. On April 19, 2004, PSGC provided a written response to the information provided in FWS's January 15, 2004 submission. Letter from Dianna Tickner, PSGC, to Chris Romaine, IEPA (April 19, 2004) (INTV Ex. 87).

On May 14, 2004, the FLM issued a letter finding that Prairie State would have an adverse effect on AQRVs, including visibility, at Mingo. The justification offered was similar to that in the January 15, 2004 submission. The letter contained no response to the information provided by PSGC on April 19, nor did it provide any responsive modeling analysis. In support of its May 14, 2004 adverse impact finding, the FLM put forth two arguments. First, if FLAG were followed verbatim (including the assumption that Prairie State will emit at the short-term limit everyday for the visibility modeling), emissions from Prairie State would likely result in more than 12 days out of three years over the 10 percent change in extinction threshold, where one day over the 10 percent threshold has been deemed an adverse impact by the FLM in the past. Second, the predicted maximum annual sulfate and nitrate deposition at Mingo as a result of Prairie State emissions exceeded the FLAG thresholds and indicate a level where harmful effects may occur. The FLM disagreed with Dr. Tombach and questioned whether his work was peer reviewed. The FLM offered nothing as to the basis for that disagreement other than it did not want to have an "objective discussion of FLAG thresholds and sound scientific examination of the FLAG methodology" in "the context of any ongoing PSD permit process." Pet. Ex. 10, Enc. at 6. The FLM did not acknowledge Dr. Kramer's analysis.

PSGC provided its response to the May 14 finding on June 21, 2004. Letter from Dianna Tickner, PSGC, to Dave Kolaz, IEPA (June 21, 2004) (INTV Ex. 69). That response included another report by Dr. Tombach directly responding to FLM's May 14 comments. *See* Dr. Tombach, Comments Concerning the USFWS Adverse Impact Letter Concerning the Prairie

State Generating Station (June 21, 2004) (INTV Ex. 62). Dr. Tombach pointed out that his analysis *was* based on peer-reviewed work and reflected the current state of knowledge on visibility perception. *Id.* at 1. He acknowledged that all experimental data are to some degree incomplete but that scientists address this issue routinely by assigning estimates of error to their conclusions. *Id.* at 1-2. Dr. Tombach pointed out the inconsistency in FLM's position with respect to peer review as it had not subjected its own thesis regarding the trajectory of air pollution arriving at Mingo to peer review or even explained its methodology for arriving at its thesis. *Id.* at 2-3. Finally, Dr. Tombach explained the genesis of the default natural conditions and why refined estimates were more appropriate and consistent with EPA's guidance for the regional haze program. *Id.* at 4-5. Further Class I SO₂ increment modeling was also provided in July 2004 to respond to comments about the inventory and to incorporate updated inventory data provided by IEPA.⁶¹ *See Addendum: Updated Cumulative SO₂ Class I Increment Analysis for the Prairie State Generating Station (July 7, 2004) (INTV Ex. 63).*

The FLM did not formally respond to the April 19 and June 21 submittals from PSGC. Instead, after several months of discussion, FWS called a meeting on December 21, 2004 in which it reiterated its concerns and restated its position that it could not deviate from FLAG. Based on that position, the FLM would not take into account the site-specific factors used in the modeling and supporting material. The FLM also indicated it would not withdraw its adverse impact finding.

After the meeting, Ms. Kroack sent FWS a letter on December 22, 2004 in another attempt to address the FLM's concerns. Letter from Laurel Kroack, IEPA, to Sandra Silva, FWS

⁶¹ "Inventory" refers to other PSD sources whose emissions are included in modeling analyses. Inventories are typically obtained from the state.

(Dec. 22, 2004) (INTV Ex. 88). In that letter, Ms. Kroack identified several mitigation measures PSGC offered to reduce SO₂ emissions and thus any potential impact to Mingo. Specifically, PSGC agreed to: (1) limit operations through 2009 to reduce total SO₂ emissions to 10,679 tons per year and 11,273 tons per year for 2010; and (2) purchase 25 percent more SO₂ credits than required until CAIR⁶² (or other rules) takes effect limiting emissions. IEPA subsequently included these requirements in the Permit. Permit Conditions 1.9, 2.1.7.b, (INTV Ex. 1).

4. IEPA provided a rational basis for its decision to reject the FLM's adverse impact finding.

On January 13, 2005, IEPA responded to the FLM's adverse impact finding by rejecting it and the rationale behind it.⁶³ See Kroack Letter (INTV Ex. 51). In her letter, Ms. Kroack stated that the FLM had failed to take into account the appropriate refinements in the modeling, additional materials provided by PSGC (e.g., those by Dr. Tombach and Dr. Kramer), additional emission reductions agreed to by PSGC, and the fact that air quality in the region was improving as a result of other federally imposed programs. IEPA, in contrast, had fully considered all the information and, consistent with the definition of adverse impact, concluded that Prairie State would not have an adverse impact on AQRVs, including visibility, at Mingo.

Indeed, the FLM's position was unreasonable as a matter of law. See, e.g., *General Electric Co. v. EPA*, 290 F.3d 377 (D.C. Cir. 2002) (vacating a guidance document treated as binding by the agency where it had not been duly promulgated); accord *Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000). FLAG specifically states it is not binding, but FWS

⁶² Clean Air Interstate Rule (issued by EPA on March 10, 2005).

⁶³ IEPA spoke with DOI a week earlier and the Department indicated its position had not changed. Email from Chris Romaine, IEPA, to Laurel Kroack, IEPA (Jan. 4, 2005 at 4:57 p.m.) (INTV Ex. 65).

apparently ignores that. *See* 66 Fed. Reg. 382, 383 (Jan. 3, 2001) (FLAG “is only guidance, not a rule”). Contrary to FWS, the U.S. Forest Service has recognized and affirmed that FLAG is not binding. Letter from James T. Gladen, Forest Service, to Jim Sims, Western Business Round Table (Jan. 23, 2004) (“No one is required to follow the FLAG recommendations”) (INTV Ex. 64). The Forest Service went on to state:

The FLAG was issued as a guideline not “to avoid the rigors of the Federal rulemaking process” But [sic] rather to give maximum flexibility in their application; applicants and regulations [sic] may chose [sic] to follow or not to follow the document. In fact, issuing FLAG as a Federal rule likely would have required compliance instead of leaving it as an option.

Id. at 2.

IEPA, unlike FLM, evaluated the thresholds in FLAG and their applicability on a case-by-case basis and in the context of a specific permitting action. IEPA concluded that the CALPUFF modeling and refinements by Mr. Scire were warranted in this situation:

The Illinois EPA has discussed FWS’ concerns and comments on whether the adjustments made to the FLAG model are appropriate under the circumstances presented by this permitting transaction. The Illinois EPA, however, does not believe that it is appropriate, not in the spirit of consultation and cooperation, for FWS to have publicly taken the position that no adjustments to the FLAG model may be considered because to do so would impact “consistency and fairness to all potential PSD applicants” (*See* page 6), as not all PSD projects are similarly situated. Existing air quality conditions, pending regulations, weather, wilderness area or park usage and hours may vary significantly from area to area, and models already very conservative in nature should ease those more conservative assumptions where appropriate. In addition, the Illinois EPA has included provisions to reduce the allowed variability in daily emissions of SO₂, the key pollutant for visibility impacts, as it is feasible to do so.

Id. at 6. *See also* RS No. 306 at 142-43 (INTV Ex. 4).

IEPA also found Dr. Tombach's findings with respect to visibility persuasive, as applied to the specific circumstances at Mingo. Kroack Letter at 6 (INTV Ex. 51). The FLM offered IEPA no scientific reasons to reject or dispute Dr. Tombach's findings:⁶⁴

The Illinois EPA suggests that in the interest of cooperation and consultation, the findings of Dr. Tombach should not be summarily dismissed, but should be considered by FWS. Illinois EPA has reviewed Dr. Tombach's findings and has found them persuasive as applied to the specific circumstances of the Mingo Wilderness Area. In our discussions with FWS staff on Dr. Tombach's adjustment, FWS has not stated any scientific reasons to reject or dispute these findings, but rather a reluctance to modify the criteria in its guidance on a case-by-case basis.

Id.

Likewise, IEPA found Dr. Kramer's analysis persuasive and the FLM offered no reason whatsoever, scientific or policy, to reject or dispute Dr. Kramer's analysis with respect to the effects of nitrate and sulfate deposition at Mingo:

While the sulfate and nitrate values from the FLAG guidance may be exceeded by the project's allowable emissions, the record contains evidence that supports that the depositional impacts will be non-detectable. Moreover, FLAG recognizes that depositional critical loads should be reviewed based on new information. FLAG at p. 131. FWS has not explained why this further analysis should be rejected.

Id. at 7.

In light of the information in the Record, IEPA's decision to reject the FLM's adverse impact finding clearly has a rational basis. IEPA articulated that basis in both its letter to the

⁶⁴ FWS apparently requested Dr. Malm of Colorado State University to review and comment on Dr. Tombach's analysis. See Email from Bill Malm, Co. State Univ., to John Vimont, NPS (Mar. 3, 2004 at 9:50 a.m.) (INTV Ex. 66). PSGC obtained this information in response to a FOIA request and provided it to IEPA with a response. Letter from Dianna Tickner, PSGC, to Dave Kolaz, IEPA (Oct. 28, 2004) (INTV Ex. 66). Dr. Malm concurs with Dr. Tombach that 5 percent extinction is not appropriate for Mingo, albeit he disagrees with Dr. Tombach's analysis of his earlier work.

FLM on January 13, 2005 and in its Responsiveness Summary. Petitioners have offered nothing new to show that IEPA's decision was clearly erroneous. Specific responses to Petitioners' arguments are provided below.

B. IEPA Properly Consulted with FLM.

Petitioners misstate the law in arguing that EPA, as opposed to IEPA, had to consult with FWS with respect to impacts on Mingo. Petitioners acknowledge that EPA can delegate implementation of the PSD program, but apparently contend that such delegation does not extend to the provision relating to Class I areas. They offer no support for this strained interpretation of EPA's delegation to IEPA. Moreover, if their interpretation were accepted with respect to the Class I issues, it would apply equally to all other decisions made by IEPA and effectively eviscerate the delegation program.

Pursuant to the delegation agreement between EPA and IEPA, IEPA is charged with implementing 40 C.F.R. § 52.21 on behalf of EPA. That delegation includes the provision with respect to FLMs and Class I areas. 46 Fed. Reg. 9580, 9582 (Jan. 29, 1981). IEPA acted in EPA's stead in its review of the FLM's findings, just as it did in determining BACT.⁶⁵ While IEPA's decisions are subject to EAB review, that does not mean that IEPA cannot make the decision in the first instance to reject the FLM's adverse impact finding and issue the Permit. *See Hadson*, 4 E.A.D. at 276 (discussing requirements for a state to reject FLM finding).

⁶⁵ Petitioners are correct that the ultimate decision is made by EPA, but EPA's decision here is the EAB decision. *Hadson*, 4 E.A.D. at 276 n.26 (citing *Citizens for Clean Air v. EPA*, 959 F.2d 839 (9th Cir. 1992)).

C. Petitioners' Factually and Legally Flawed Arguments Do Not Show that IEPA's Decision Lacked a Rational Basis.

Other than voicing their disagreement, Petitioners offer little to support their opinion that IEPA's decision to reject the FLM's finding was irrational. As discussed above, the Record reflects that IEPA did not summarily reject the FLM's adverse impact determination. IEPA reviewed all the information in the Record, including that provided by PSGC, and reasonably concluded that Prairie State emissions would not have an adverse impact on Mingo. IEPA articulated a rational basis for its decision in the Project Summary, the Responsiveness Summary, and correspondence with the FLM, which is all that is required. *Hadson*, 4 E.A.D. at 276 (rational basis is required for rejecting FLM adverse impact determination). Petitioners have failed to show, as they must, that IEPA's response is clearly erroneous. Therefore, review should be denied.

To support their position, Petitioners argue that: (1) it was inappropriate for IEPA to consider declining emissions; (2) IEPA did not explain how the Permit changes result in the reductions necessary to address the FLM's determination; and (3) IEPA did not address the FLM's concern with using the 30-day SO₂ limit versus the 24-hour limit. As explained below, Petitioners' arguments are factually and legally flawed.

First, it was appropriate for IEPA to consider declining emissions in responding to the FLM's comments. In doing so, IEPA was responding directly to the FLM's request for offsets. IEPA and the FLM had conflicting views regarding what could be considered an offset and whether they were required.⁶⁶ IEPA contended that emission reductions over the past few years,

⁶⁶ See *Hadson*, 4 E.A.D. at 283 ("offsets are not required by law") (citing *In re Multitrade Ltd. P'ship*, PSD Appeal Nos. 91-2 *et al.* (Adm'r Remand Order and Dismissal of Petitions for Review, Jan. 21, 1992)).

which would continue into the future as a result of existing and new law, could appropriately be considered. *See* RS No. 308 at 144-45 (INTV Ex. 4); *see also* Kroack Letter at 7-8 (INTV Ex. 51). The FLM, on the other hand, took an extreme view in arguing that IEPA could consider only future offsets that PSGC arranged for. This position ignores that emission reductions, regardless of why they come about, will benefit Mingo.⁶⁷ IEPA concluded that offsets are not necessary, but noted that reductions from both Ameren Grand Tower (20,000 tons/year) and Baldwin (200,000 tons/year) are available and contained in federally enforceable provisions. Project Summary at 25 (INTV Ex. 2). The FLM improperly found those reductions unacceptable for consideration as offsets against Prairie State emissions. IEPA rationally concluded that the FLM was not being reasonable given that the total reductions for Grand Tower and Baldwin of 220,000 tons dwarf the emissions from Prairie State of 11,866 tons per year maximum. Disagreement with the FLM's position does not mean that IEPA acted irrationally.

Second, Petitioners illogically argue that IEPA failed to explain in detail how reductions in emissions at Prairie State as a result of the new permit revisions would address impacts. It should be self-evident that, if Prairie State were to actually have an impact on Mingo, any reductions in emissions will decrease that impact. IEPA alludes to this when it states "improvements within the region will result in improvements at Mingo." RS No. 308 at 144-45 (INTV Ex. 4). Moreover, as discussed above, IEPA rejected the FLM's adverse impact finding based on its review of the information in the Record, not because of the inclusion of the new permit provisions. *See supra* at 123-134. In fact, the new provisions were included as

⁶⁷ This position by the FLM led to the Permit condition for Prairie State to purchase additional SO₂ credits to retire. Permit Condition 1.9 (INTV Ex. 1).

enhancements “to ameliorate any potential adverse impacts” in an effort to resolve the visibility issue. RS No. 306 at 142-44.

Finally, contrary to Petitioners’ argument, IEPA did address the FLM’s concern with using the 30-day SO₂ limit versus the 24-hour limit for the visibility analysis. Kroack Letter at 7 (INTV Ex. 51). As discussed above, PSGC submitted a justification for using the 30-day SO₂ emissions for the visibility analysis as opposed to the 24-hour emission rate. IEPA considered PSGC’s position and directly responded to the FLM in its January 13, 2005 letter incorporated by reference in the Responsiveness Summary. RS No. 306 at 142-44 (INTV Ex. 4). IEPA was not required to repeat this information in its Responsiveness Summary. *See Alaska Dep’t Env’tl. Conservation*, 540 U.S. at 497 (“Even when an agency explains itself with less than ideal clarity, a reviewing court will not upset the decision on that account if the agency’s path may reasonably be discerned.”) (internal cites omitted); *see also Steel Dynamics*, 9 E.A.D. at 191 (failure to explain deviation of PM limit in response to comments not error where Petitioners could deduce the likely basis).

D. IEPA Responded to FWS’s Coal Washing and Blending Comments.

Again, contrary to Petitioners’ allegation, IEPA did respond to the numerous coal washing and blending comments. *See supra* at Section IX. As the EAB has held in the past, a separate response specifically to FWS is not required. *See Steel Dynamics*, 9 E.A.D. at 180-81; *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 583 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999). It is appropriate and acceptable for IEPA to combine comments on like subjects, as was done here. *Steel Dynamics*, 9 E.A.D. at 180-81.

E. IEPA Had a Rational Basis for Including the Short-Term SO₂ Limit Reduction Condition in the Permit.

Petitioners next seek review based on the Permit provisions requiring PSGC to evaluate whether a lower short-term SO₂ emission rate is achievable. In making this argument, Petitioners must not have read the Permit condition they are appealing. Contrary to Petitioners' assertion, Condition 2.1.7(a)(ii) *automatically* decreases the 24-hour SO₂ limit from 3,126 to 2,450 lb/hour twelve months after completion of the initial performance test or 24 months after initial startup of the boiler, whichever occurs first. The Permit does not allow PSGC to claim "unacceptable or unreasonable consequences" to avoid this reduction as claimed by Petitioners. Petition at 74. Additionally, Condition 2.1.16 provides for an optimization study to further reduce the 24-hour limit with a target of 1,350 lb/hour if it can be achieved reliably. The study is to be completed within three years (or four years if IEPA grants a one year extension) after initial startup of the boiler. If PSGC elects not to do the study, the limit automatically defaults to 1,350 lb/hour.

Petitioners' argument that this reduction "offers little help for Mingo" illustrates a lack of understanding of modeling and assessing impacts. Modeling is performed based on emissions per unit time (*e.g.*, g/s), not lb/mmBtu as implied by Petitioners. Therefore, a decrease in the emission rate in lb/hour directly decreases the emissions modeled and thus the proportional impact on Mingo attributable to emissions from Prairie State. Moreover, Petitioners' argument completely ignores the two SO₂ BACT limits that apply at all times, the 30-day 0.182 lb/mmBtu and the 98 percent annual removal efficiency.

F. IEPA Had a Rational Basis for Including in the Permit the Purchase of Additional SO₂ Credits.

Petitioners also seek review based on the Permit provision requiring PSGC to purchase additional SO₂ credits. Petitioners apparently are arguing that the change made by IEPA to the

Permit does not address the adverse impact finding to the FLM's satisfaction and, therefore, IEPA had no rational basis for including it. Petitioners disagree with this provision, but offer no cognizable issue that would warrant Board review of the provision. They have not demonstrated that IEPA's decision was clearly erroneous or otherwise not in accordance with law. Therefore, review on this basis should be denied.

Petitioners also mistake the purpose of the provision requiring PSGC to purchase extra credits. IEPA based its decision to reject the FLM's adverse impact finding on the modeling and analysis performed by PSGC, not on the new permit requirement. The provision to purchase additional credits was added to the Permit "as additional enhancements" to further "reduce the potential" for impacts. RS No. 315 at 149 (INTV Ex. 4). In short, it was added to give more comfort to the FLM that, as IEPA concluded, Prairie State would have no adverse impact on Mingo. IEPA obviously concluded that this provision would have the potential effect of lowering emissions even further and thus could only reduce any impacts at Mingo. *See id.* at 144-45, No. 308 (cause of impacts on visibility at Mingo are regional in nature; improvement within the region will result in improvements at Mingo). Indeed, lower emissions are what the FLM wanted (through offsets, etc.), given that lower emissions should result in less impacts, assuming those impacts are in any way attributable to Prairie State in the first place. The disagreement was over how much lower. Clearly, IEPA had a rational basis for adding this provision and review should be denied.

G. IEPA Satisfied the Notice Requirements.

Petitioners argue that IEPA's Public Notice was deficient because it failed to convey the FLM's conclusions with respect to Mingo. Petition at 75-76. Petitioners' argument is based on a misunderstanding of the facts and a misapplication of the controlling regulations, and review should be denied.

Section 52.21(p) of Title 40 of the C.F.R. governs IEPA's obligation to address an adverse impact determination from the FLM. The regulations require IEPA to:

consider any analysis performed by the Federal land manager, *provided within 30 days of the notification* required by paragraph (p)(1) of this section, that shows that a proposed new major stationary source or major modification may have an adverse impact on visibility in any Federal Class I area. Where [IEPA] finds that such an analysis does not demonstrate to the satisfaction of [IEPA] that an adverse impact on visibility will result in the Federal Class I area, [IEPA] must, in the notice of public hearing on the permit application, either explain his decision or give notice as to where the explanation can be obtained.

40 C.F.R. § 52.21(p)(3) (emphasis added).⁶⁸ As shown below, the FLM did not satisfy the prerequisite timing requirement; therefore, IEPA was under no obligation to follow the remaining regulatory requirements — namely to explain the FLM's decision in the Public Notice. Nevertheless, IEPA included a reference to FWS's comments and responded to the information that FWS had provided before the Public Notice was issued:

The U.S. Fish and Wildlife Service has submitted information to the Illinois EPA for this hearing about the proposed plant's potential impacts on the Mingo Wilderness Area, including background information about the Mingo Wilderness Area and an analysis of the visibility modeling submitted for this area by Prairie State. These documents are available at the repositories listed below and are further addressed by the Illinois EPA in the project summary prepared for this application.

See IEPA, Notice of Public Hearing and Comment Period, Proposed Issuance of a Construction Permit/PSD Approval to Prairie State Generating Station, LLC ("Public Notice") (INTV Ex. 67).

⁶⁸ Paragraph (p)(1) requires the permitting agency to give a copy of all information relevant to the permit application, including an analysis of the anticipated impacts on visibility, to the FLM within 30 days of receipt and at least 60 days prior to any public hearing.

As discussed above, IEPA provided FWS a copy of the incomplete October 2001 Application in mid-April 2002.⁶⁹ RS No. 311 at 136 (INTV Ex. 4). PSGC provided the Class I modeling and analyses to IEPA and FWS in July and August 2003.⁷⁰ Email from Dianna Tickner, PSGC, to Rob Kaleel, IEPA (July 8, 2003 at 7:58 a.m.) (transmitting files); Email from Dianna Tickner, PSGC, to Rob Kaleel, IEPA (Aug. 8, 2003) (transmitting files and white paper on visibility) (INTV Ex. 68). FWS provided comments in January 2004 (at least three months after the submission of the visibility analysis), but the FLM did not make an adverse impact finding at that time. IEPA subsequently issued its Public Notice in February 2004, where it noted the January comments by FWS and referred the public to the Project Summary for its analysis of those comments. *See* Public Notice (INTV Ex. 67). The Public Hearing was then held on March 22, 2004. *Id.* The FLM finally issued its adverse impact finding in May 2004, nine months after the visibility modeling was submitted and three months after the Public Notice.

Given that the adverse impact determination was not submitted to IEPA within the time specified in the regulation (*i.e.*, within 30 days of notification), IEPA was not required to include any rationale in the Public Notice or elsewhere. Indeed, since the FLM did not issue its finding until after the Public Notice, it is hard to imagine how IEPA could have included the finding in the Public Notice. Regardless, it is undisputed that IEPA included information it had received from FWS in the Public Notice and also addressed it in the Project Summary. *See* Petition at 75.

⁶⁹ PSGC provided FWS a copy of the October 2002 Application on November 7, 2002. Email from Dianna Tickner, PSGC, to Rob Kaleel, IEPA (Sept. 17, 2003 at 12:10 p.m.) (INTV Ex. 90).

⁷⁰ The modeling and analyses were provided to FWS again on September 24, 2003. As previously discussed, additional increment modeling was provided that incorporated the short-term SO₂ limit and corrections to the inventories. *See supra* at 126. The visibility modeling, which is the basis of the FLM's adverse impact finding, was not revised after July 2003.

Petitioners acknowledge that the Public Notice addresses FWS's submittals to IEPA regarding potential adverse impacts, but they nevertheless argue that the Notice was deficient because it failed to inform the public of the FLM's conclusions. Such argument is without basis and should be rejected.

Finally, Petitioners seek to mislead the Board by arguing that IEPA misstated the FLM's findings in the Project Summary. *See* Petition at 76. As the language quoted by Petitioners indicates, IEPA's February 2004 Project Summary and the draft Permit for public comment both reported the results of PSGC's modeling, *not* FWS's modeling. *See* Project Summary at 24 (INTV Ex. 2). There were no FWS modeling results to report in February 2004; IEPA provided all the information it had at the time that the Public Notice was issued. *See* Draft Permit Finding 6b (INTV Ex. 5) (“[C]omments submitted by the Federal Land Manager prior to the start of the public comment were included in the material placed in the public repository of documents developed as part of the public comment period.”). In the absence of any FWS modeling results or finding to trigger the notice obligations of 40 C.F.R. § 52.21(p)(3), Petitioners' assertion that IEPA failed to satisfied the requirements of 40 C.F.R. § 52.21(p)(3) is misplaced.

In sum, IEPA had a rational basis for rejecting the FLM's adverse impact finding and/or including the additional permit provisions to further reduce SO₂ emissions. IEPA also followed the notification requirements of 40 C.F.R. § 52.21(p) with what information it had from the FLM. Review of the Permit on this basis should be denied.

XII. THE PM LIMITS IN THE PERMIT ARE BACT.

Petitioners lodge several uninformed attacks on the Permit's PM BACT limits. Specifically, Petitioners argue that: (1) the total PM limit is too high to represent BACT; (2) IEPA's decision to allow the PM limit to be made more stringent based on actual operating data violates the CAA's requirement to establish pre-construction BACT limits; (3) IEPA did not adequately explain how it arrived at the total PM BACT limit; (4) the test plan and report for lowering the total PM limit must be made available for public comment; (5) the filterable PM limit is too high to represent BACT; and (6) the BACT limits are unenforceable due to infrequent testing and the fact that PM CEMs are used only for compliance assurance monitoring, as opposed to establishing actual permit violations.⁷¹ Petition at 76-87. As explained below, none of these arguments identifies a clearly erroneous finding of fact or conclusion of law, nor do they highlight an important policy consideration or exercise of discretion that warrants review. Therefore, as to these arguments, the Petition fails to present grounds for the Board's review and should be denied.

⁷¹ Petitioners also seem to argue that the Permit is invalid because the final total PM limit, which is more stringent than the draft Permit's limit, was not subject to public review. Petition at 77. Such an argument has been routinely rejected by the Board:

[I]t is self-evident that Petitioners are in no position to oppose the decision to tighten the permit's SO₂ emissions. Petitioners are not worse off with the revision than without it. Moreover, there is no reason to believe that tightening the emissions limitation is likely to result in unanticipated adverse environmental consequences in comparison with retention of the previous, less stringent emissions limitation. The revised permit by all accounts is a logical outgrowth of the notice and comment process and all commenters have had a fair and reasonable opportunity to present their views on the permit.

Old Dominion, 3 E.A.D. 779, 1992 EPA App. LEXIS at *41-42.

A. The Total PM Emission Limit Is BACT.

Petitioners argue that the total PM limit is invalid because they submitted comments identifying three other proposed power plants with permitted total PM limits below Prairie State's limit (Longview in West Virginia, Thoroughbred in Kentucky, and Elm Road in Wisconsin).⁷² Petition at 77-78. These limits, Petitioners argue, establish a "presumption" that 0.018 lb/mmBtu is BACT. *Id.* at 78. According to Petitioners, IEPA's explanation for rejecting these limits as BACT was not detailed enough to overcome the presumption. *Id.* These arguments are not persuasive.

First, it is quite clear that there is no such thing as a presumptive BACT. As previously discussed in Section IV, BACT is a case-by-case analysis that must take into account site-specific and source-specific characteristics. CAA § 169(3), 42 U.S.C. § 7479(3); accord 40 C.F.R. § 52.21(b)(12); see also *Alaska Dep't Env'tl. Conservation*, 540 U.S. at 488 (recognizing that "Congress entrusted state permitting authorities with initial responsibility to make BACT determinations 'case-by-case'") (internal citations omitted). Petitioners rely on the Board's decision in *Hibbing Taconite* (Petition at 78) to support the notion of a presumptive BACT, but their citation is disingenuous at best. In that case, the Board merely held that where an *existing* facility had been using a particular fuel for years before a modification, there is a presumption that it is economically feasible to continue to burn that fuel after the modification. *Hibbing Taconite*, slip op. at 4. This holding is inapplicable to Prairie State as a new facility. Unlike in *Hibbing Taconite*, Petitioners here are trying to apply PM limits from proposed facilities to establish a "presumptive" BACT limit for another proposed facility. Although relevant to

⁷² Petitioners constantly refer to "four" permitted facilities with a lower total PM emission limit. An accurate count, however, reveals that Petitioners identify only three (unconstructed) facilities that fit this description (Longview, Thoroughbred and Elm Road).

IEPA's analysis, these undemonstrated emission limits cannot establish a presumptive BACT for Prairie State.

Second, IEPA's Responsiveness Summary directly addressed Petitioners' argument by explaining that the three PM limits at issue have not been demonstrated to be achievable. RS No. 182 at 83 (INTV Ex. 4). In the Petition, Petitioners merely repeat their comments on the draft Permit and claim IEPA's response is inadequate. Petition at 78-79. The Board has consistently held that "[i]t is not enough to simply reiterate comments made to the permitting authority." *Knauf I*, 8 E.A.D. at 127 (citing *In re LCP Chemicals - New York*, 4 E.A.D. 661, 664 (EAB 1993)). Instead, Petitioners' burden is "to explain why the permitting authority's response to those objections (for example, in a response to comments document) is clearly erroneous or otherwise warrants review." *Id.* (citing *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997)).

Petitioners offer no new argument to carry their burden. They complain that IEPA's explanation is inadequate, but demand only that the agency "give more reasons" as to why the PM limits from the three cited permits do not constitute BACT. Petition at 78. Petitioners are confused as to where the burden lies. IEPA stated that these limits — for *proposed* facilities — do not establish BACT because they have not been demonstrated to be achievable, as required by 40 C.F.R. § 52.21(b)(12). After receiving this factually supported explanation, it is the Petitioners' burden to show this finding was clearly erroneous or contrary to law. Petitioners offer no evidence to do so and, thus, the Petition must fail as to this issue.

B. IEPA Employed a Reasonable Approach to Controlling Condensable PM Emissions.

Petitioners next attack the Permit condition requiring Prairie State to re-evaluate and potentially tighten the total PM limit based on actual operating data. Petition at 79-80.

Petitioners claim that this condition violates the CAA despite the Board's prior approval of such an approach in *AES Puerto Rico*. Two arguments are offered to overturn the Board's precedent: (1) the *AES Puerto Rico* decision is six years old and substantial experience relating to the control and measurement of condensable emissions is improved; and (2) the CAA requires BACT limits to be set prior to construction and, apparently, not revised upon the consideration of actual operating data. Pctition at 79-80. Neither argument, however, demonstrates that IEPA's approach to regulating total PM emissions was clearly erroneous or contrary to law, and Petitioners do not raise important policy concerns that warrant the Board's review.

1. IEPA acted rationally in light of the limited data available.

To establish a total PM limit, IEPA explored the universe of data available on the control of filterable and condensable PM emissions. After an extensive review, IEPA recognized that because of "the limited data that is available on the rates of condensable emissions from pulverized coal boilers, especially new boilers burning Illinois coal which are equipped with high-efficiency SCRs," it could not establish with certainty the levels of total PM control achievable at Prairie State. Project Summary at 12 (INTV Ex. 2); *see* Permit Application, App. C at C-30 to C-31 (citing *AES Puerto Rico*, 8 E.A.D. at 328) (INTV Ex. 6); Letter from Dianna Tickner, PSGC, to David Kolaz, IEPA at 7-8 (June 21, 2004) (INTV Ex. 69). Faced with this limited data, and the legal duty to establish BACT limits, IEPA set a stringent filterable PM limit in the draft Permit and determined that control of sulfuric acid mist would serve as a surrogate to control condensable emissions. Project Summary at 12 (INTV Ex. 2).

During the public comment period, however, EPA Region V commented that IEPA needed to establish a total PM BACT permit limit that included both filterable and condensable emissions. RS No. 159 at 73 (INTV Ex. 4). In specific response to EPA's comment, IEPA established a total PM limit in the final Permit. *Id.* (*see infra* at 153 for a discussion for how

IEPA calculated the total PM BACT limit). Importantly, IEPA did not stop there. The agency also required that the total PM limit be made more stringent if actual operating data reveals that a lower limit is achievable on a continual basis. Permit Condition 2.1.17 (INTV Ex. 1).

This is the exact same fact pattern that was approved in *AES Puerto Rico*, with the exception that the permit in *AES Puerto Rico* allowed the facility to make the total PM limit *less* stringent over time. *AES Puerto Rico*, 8 E.A.D. at 349 (citing *Hudson*, 4 E.A.D. at 291).⁷³ Recognizing the paucity of data on condensable PM emissions control, the Board stated in that decision that while there is “some uncertainty as to what emission limit was achievable ... the use of an adjustable limit, constrained by certain parameters, and backed by a worst case air quality analysis, is a reasonable approach.” *Id.* This is the same approach followed by IEPA.⁷⁴ Clearly, that approach is reasonable and will ensure that Prairie State achieves the maximum levels of PM emissions reductions possible.⁷⁵

Despite this clear Board precedent, Petitioners contend that “substantial experience” regarding the control and measurement of condensable PM emissions has been gained since the Board’s previous approvals of this approach. Petition at 79. To support this assertion,

⁷³ *AES Puerto Rico*’s original total BACT limit of 0.015 lbs/mmBtu was not achieved during the performance study and, thus, the permit was revised to establish a new total BACT limit of 0.03 lb/mmBtu. Letter from Walter Mugdan, EPA Region II, to Carlos Reyes, AES Puerto Rico, L.P. (Aug. 10, 2004) (INTV Ex. 71).

⁷⁴ The Application explained that 0.05 lb/mmBtu was the emission rate used for total PM in conducting the worst case air quality analysis. Permit Application, App. B at Attachment B-1, App. C at C-31 (INTV Ex. 6).

⁷⁵ This is further guaranteed by Permit Condition 2.1.6.a, which requires Prairie State to operate at all times in a manner to minimize emissions.

Petitioners refer again only to the three *unconstructed* facilities⁷⁶ discussed above and Northampton. *Id.* As discussed above, these three unconstructed facilities do not have operating data to demonstrate the achievability of these limits. IEPA found that these limits “do not provide a reliable basis to set [a total PM BACT] limit.” Project Summary at 12 (INTV Ex. 2). Petitioners offer nothing to refute this.

With respect to the Northampton plant, Petitioners describe it as a similar facility that is meeting a total PM limit below Prairie State’s limit. Petition at 79. Petitioners admit, however, that IEPA addressed this claim in the Responsiveness Summary. There, IEPA concluded that, based on the West Virginia Department of Environmental Protection (“DEP’s”) analysis, the testing at Northampton did not measure total PM, only filterable PM. RS No. 171 at 78 (INTV Ex. 4). Petitioners simply disagree with this conclusion and submit a 2001 memo from a staff member at Pennsylvania’s DEP that purports to show that source testing at Northampton included both filterable and condensable PM. Again, as noted in IEPA’s Responsiveness Summary, West Virginia looked at the 2001 testing summarized in this memo and determined that the “compliance testing was conducted using a modified Method 5. This testing technique does not measure condensable PM₁₀.” *See* West Virginia DEP’s Addendum to the Preliminary Determination/Fact Sheet for Longview Power, LLC at 8 (Dec. 4, 2003) (attachment to Email from Dianna Tickner, PSGC, to Chris Romaine, IEPA (Jan. 3, 2005 11:33 a.m.) (INTV Ex. 47).

Regardless, the Northampton facility is not similar to Prairie State; Northampton burns anthracite coal in a circulating fluidized bed boiler system. *See* West Virginia DEP’s Response to Comments No. 1 for Longview Power, LLC at 27 (INTV Ex. 70). The type of coal and the

⁷⁶ Again, Petitioners mistakenly state that there are four permits with permitted total PM limits below Prairie State’s limit. As discussed above, there are only three unconstructed facilities identified by Petitioners that fit this description. *See supra* at 144 n.72.

type of boiler system are two substantial distinctions from the Prairie State facility. The Board has previously held that a permitting authority did not commit clear error by not considering a facility using a pulverized coal boiler when conducting a BACT analysis for a facility that would use a circulating fluidized bed because the two facilities were not “similar source[s].” *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 146 (EAB 1994). Certainly, the inverse should hold true as well. Therefore, even if it were true that Northampton was meeting a total PM limit that is lower than Prairie State’s limit, the data still would not establish that a lower limit is achievable at Prairie State or that it was clear error for IEPA not to consider this facility in its BACT analysis. As the Board has previously held, it is not enough to show certain sources were not consulted. “For a remand, there must be a compelling reason to believe that the omissions led to an erroneous permit determination — in other words, that they materially affected the quality of the permit determination.” *Mecklenburg Cogeneration*, 3 E.A.D. at 494 n.3. Petitioners may disagree with West Virginia’s and IEPA’s conclusions, but they have added nothing new to show IEPA’s PM BACT determination was clearly erroneous.

2. The pre-construction BACT limit complies with the CAA.

Petitioners’ second attack against IEPA’s approach to regulating condensable emissions is that the CAA requires a pre-construction BACT limit, and that the Permit violates this requirement by allowing the BACT limit to be adjusted over time. This argument contains two fatal flaws. First, it ignores the fact that the Permit, in fact, contains a BACT limit for total PM that was established after IEPA’s review of available data. *Id.* at 77, No. 168 (INTV Ex. 4) (“The issued permit ... also contains a BACT limit for total PM, 0.035 lb/mmBtu, which is subject to further evaluation and lowering based on actual performance data.”). Prairie State must comply with this limit at all times, including during the optimization period. The fact that

Petitioners may disagree that the limit represents BACT does nothing to change the fact that a BACT limit is in place.

Second, Petitioners' argument simply disregards the Board's previous holdings that approved adjustable BACT limits without offering any rationale for why these cases are inapplicable. To recap, in the present case, IEPA set a BACT limit based on the limited data available, and that limit was supported by a worst case air quality analysis. *Id.* at 82, No. 180. IEPA then included a requirement that this limit be revised downward (more stringent) based on three years of actual operating data. Permit Condition 2.1.17 (INTV Ex. 1). Except for the fact that the Permit in *AES Puerto Rico* allowed the total PM limit to be revised *upwards* (less stringent) via an administrative permit change, this is exactly the same situation the Board approved in that case. *AES Puerto Rico*, 8 E.A.D. at 349. The Board has upheld a similar approach in at least two other decisions. *See Steel Dynamics*, 9 E.A.D. at 189-91 (finding no clear error where the permitting authority failed to explain its derivation of the total PM limit, but where it was obvious that the limit was based on a review of available data, supported by a worst-case air quality analysis, and was subject to adjustments in accordance with actual emissions); *Hadson*, 4 E.A.D. at 291 (finding that a permit condition allowing for the periodic downward adjustment of a NO_x BACT limit was reasonable). Petitioners' second argument directly contradicts these holdings without explanation.

C. IEPA's Explanation for the Total PM Limit Was Plainly Adequate.

Petitioners next argue about the amount of detail IEPA provided to explain its PM BACT analysis. Petitioners contend that "IEPA must conduct a top down BACT analysis for total PM/PM10 and rebut the presumption that BACT for Peabody [sic] is a PM/PM10 emission rate no higher than 0.018 lb/mmBtu." Petition at 81. Contrary to Petitioners' wishes, this is not what

is required by law. The Record reveals that, based on the available data, IEPA conducted an adequate BACT analysis, arrived at a reasonable emission limit with the requirement to adjust that limit if actual data showed an adjustment was necessary, and clearly articulated this rationale. Such an approach is reasonable and legally supported.

First, as discussed above, Petitioners are mistaken when they claim that IEPA must rebut a presumptive BACT limit. Because BACT is a case-by-case analysis, there is no such thing as a presumptive BACT limit.⁷⁷ See *supra* at 144-45. Furthermore, permitting authorities are not required to perform a “top down” BACT analysis in order to establish valid BACT limits. See, e.g., *Steel Dynamics*, 9 E.A.D. at 183 (“This top-down analysis is not a mandatory methodology.”) It is clear that what Petitioners demand is not what the law requires.

IEPA plainly satisfied its duty to explain how it established the BACT limit for total PM emissions. The Responsiveness Summary explains that the IEPA evaluated data from around the country and noted the great variability in controlling PM emission rates. RS No. 163 at 76 (INTV Ex. 4) (“[T]he extensive database of test results from Florida confirms significant variability in the tested PM/PM10 emissions of power plants.”), No. 164 at 76 (“Data from other tests confirms variability in performance.”).

In contrast to Petitioners’ unsupported arguments related to the supposed advances in PM control technology, data provided during the comment period support IEPA’s total PM BACT limit by demonstrating the high variability of PM emissions. For example, during the permitting process, Petitioners argued that IEPA ignored certain low emission rates measured during recent stack tests in Florida. RS No. 163 at 75-76 (INTV Ex. 4). IEPA responded, however, that the

⁷⁷ This is especially true for coal-fired power plants because different coals have different relevant characteristics, such as the ash content that produces PM.

comments disregarded other data taken from those same facilities revealing great variability in the PM emission rates. *Id.*; see also Email from S. Shah, IEPA, to C. Romaine, IEPA (Apr. 26, 2005 11:24 a.m.) (forwarding Email from Deborah Nelson, Florida DEP, to Shashi Shah, IEPA (attaching Florida's database for PM stack tests) (Nov. 4, 2004, 11:17 a.m.)) (INTV Ex. 72); Email from Shashi Shah, IEPA, to Chris Romaine, IEPA (explaining that his review of the Florida databases reveals the selective presentation of PM stack test data) (Nov. 12, 2004, 4:30 p.m.) (INTV Ex. 73). To demonstrate, IEPA pointed out that individual stack tests at a single emissions unit in Florida measured filterable PM/PM₁₀ emissions ranging from 0.0004 to 0.0211 lb/mmBtu. RS No. 163 at 76 (INTV Ex. 4). The result was similar in other stack tests around the country, including those tests that measured both filterable and condensable emissions. *Id.* at 76, Nos. 164-65. In light of this variability, IEPA acted reasonably and prudently in setting a BACT limit consistent with available data, but also by including an optimization period to more accurately define the limit that could be achieved on a continual basis.

IEPA also considered the need for "an appropriate safety factor to accommodate normal variation in performance when the control system is properly operated and maintained." *Id.* at 73, No. 158.⁷⁸ Recognizing that the practical difficulties of controlling PM emissions may require a relatively larger safety factor when compared to other pollutants (*id.*), IEPA established a filterable PM limit of 0.015 lb/mmBtu. This limit is consistent with the data available on current levels of achievable PM emissions. *Id.* at 75-76, Nos. 162-64; Calculation Sheet, Attachment 2.1 (INTV Ex. 3) (showing filterable PM limits for recently permitted facilities burning non-PRB coal ranging from 0.012 to 0.02 lb/mmBtu).

⁷⁸ As discussed above, the use of safety factors has been accepted by this Board as a reasonable approach to setting achievable BACT limits. *Supra* at 77-79.

Next, IEPA explained that after receiving comments from EPA Region V, it recognized a total PM limit was necessary to address potential condensable PM emissions in addition to the filterable portion. RS No. 159 at 73 (INTV Ex. 4). As discussed above, however, a major problem with assessing condensable emission limits is the lack of data demonstrating the emission rates that are achievable on a continual basis. Recognizing this, IEPA had to turn to alternative methods for estimating the amount of condensable emissions that could be removed.

Noting that a 0.05 lb/mmBtu total PM emission rate, taken from *AES Puerto Rico's* permit, had been used for purposes of the worst-case air quality analysis, and that 0.015 lb/mmBtu of this number could be attributed to the filterable PM portion, IEPA determined that half of the remaining condensable emissions were attributable to sulfuric acid mist emissions. *Id.* at 80, No. 176. Because the WESP is expected to control sulfuric acid mist emissions with a removal efficiency of 98 percent, IEPA subtracted these condensable emissions to arrive at an upper boundary of possible total PM emissions $(0.05 - ((0.05 - 0.015) \times \frac{1}{2} \times 0.98) = 0.03285 \approx 0.035)$.⁷⁹ *Id.* at 80-81, Nos. 176-77. Again, the Agency did not stop there. The Permit also includes an extensive protocol for lowering this limit based on actual operating data. Permit Condition 2.1.17 (INTV Ex. 1). As IEPA noted, “[t]his further evaluation is an essential component of the BACT determination for total PM/PM10 emissions. It is necessitated by the current state of scientific knowledge about condensable particulate emissions, total PM10 emissions, and their control.” RS No. 168 at 77 (INTV Ex. 4).

⁷⁹ Subtracting the filterable limit (0.015) from the total limit (0.035) produces a theoretical limit for condensable PM of 0.02 lb/mmBtu. This is the same value EPA provides in its AP-42 document as the emission factor for condensable PM emissions from PC boilers burning sub-bituminous or bituminous coal. AP-42 at Table 1-1.5 (INTV Ex. 74). This further evidences the reasonableness of IEPA's approach.

IEPA not only utilized a reasonable approach, it articulated each step of the approach. Petitioners' dissatisfaction with IEPA's explanation provides no legal basis for its rejection. As discussed above, a very similar, if not identical, approach has been affirmed in several Board decisions, most recently in *Steel Dynamics*. In that case, after recognizing that the permitting authority conducted a worst-case air quality analysis and set a reasonable limit based on available data, subject to an adjustment based on actual emissions data, the Board found "no clear error or abuse of discretion." *Steel Dynamics*, 9 E.A.D. at 191-92. Furthermore, it is clear that establishing a BACT limit is a technical determination, and this Board has applied a heightened level of deference to permitting authorities making such determinations:

The Board traditionally assigns a heavy burden to petitioners seeking review of issues that are essentially technical in nature. *Moscow*, slip op. at 9, 10 E.A.D. ___; see also *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001). When the Board is presented with technical issues, we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record. *D.C. MS4*, slip op. at 15, 10 E.A.D. ___.

Teck Cominco Alaska, slip op. at 22.

In light of such deference, IEPA's approach was reasonable and was clearly articulated in the Record. Petitioners' argument simply offers an alternative method to establish a total PM BACT limit, but it fails to show that IEPA's approach is clearly erroneous or contrary to law. As the Board has stated:

Of course, a petitioner cannot gain review of a permit merely by presenting an alternative theory regarding a technical matter. If the Board is presented with conflicting expert opinions, as is the case here, we will 'look to see if the record demonstrates that the [permitting agency] duly considered the issues raised in the comments and if the approach ultimately selected * * * is rational in light of all the information in the record, including the conflicting opinions.'

Steel Dynamics, 9 E.A.D. at 180 n.16 (internal citations omitted).

Because Petitioners have failed to show IEPA's method was clearly erroneous, they have failed to establish grounds for review. This conclusion is only strengthened when considering the Permit's requirement to tighten the total PM limit based on real data. The Board should affirm the total PM BACT limit as reasonable.

D. Petitioners Misunderstand the Law Regarding Public Review of a Plan to Reduce the Total PM BACT Limit.

Petitioners argue that the Permit must be remanded because the testing plan Prairie State may develop to assess whether PM limits should be lowered is not subject to public review and comment. Petition at 82. The only legal authority given for requiring this plan to be made available for public comment are two Board decisions: *Tallmadge Generating Station*, PSD Appeal No. 02-12, slip op. at 26 (EAB May 21, 2003), and *RockGen*, 8 E.A.D. at 553. As the Board made clear in a more recent decision, however, these two decisions are inapplicable to the current situation. *In re Indeck-Niles Energy Ctr.*, PSD Appeal No. 04-01, slip op. at 15-18 (EAB Sept. 30, 2004).

As discussed multiple times above, there are very limited data available on the control of condensable emissions. As a result, IEPA was forced to set a total PM BACT limit based on its reasoned judgment of the lowest emission limit that could be achieved on a continuous basis, and to require that this limit be re-evaluated and possibly tightened if actual data proved lower emissions are possible. Permit Condition 2.1.17 (INTV Ex. 1). The re-evaluation and optimization program requires Prairie State to develop a testing plan that includes at least five performance tests conducted at both moderate and full loads. *Id.* IEPA must accept this testing plan. PSGC must then complete the testing within the first three years of operations and provide a full written report to IEPA establishing the lowest emission rate that the facility can

continuously achieve.⁸⁰ *Id.* If PSGC chooses not to develop a testing and optimization program, the total PM limit will be automatically revised downward to 0.018 lb/mmBtu (*id.* at 2.1.17.a.ii.A), which corresponds to the most stringent total PM permit limit in the country for this type of facility. Calculation Sheet at 12, Attachment 2.1, and Table 2.c (INTV Ex. 3) (PM₁₀ Rankings). Importantly, Prairie State will be subject to a PM BACT limit at all times while operating, including during this optimization period. Permit Condition 1.4.a.i (INTV Ex. 1).

Petitioners argue that the Board's decisions in *Tallmadge* and *RockGen* mandate that testing or operating plans that affect PSD limits, and which are developed after permitting, must be made available for public review. The two cases cited by Petitioners, however, are factually distinguishable. In those two cases, the permits at issue required the permittee to develop an operating plan to minimize emissions during startup and shutdown. Once accepted by the permitting agency, these plans were to be implemented and followed by the facility for the life of its operations. During startup and shutdown, the facilities were required only to comply with these plans and were not required to comply with BACT limits established through the permitting process. In such instances, the Board had little difficulty in remanding the permits because it found the PSD limits were being supplanted by actions "outside of the PSD permitting process." *RockGen*, 8 E.A.D. at 554 n.22.

In the subsequent *Indeck-Niles* decision, however, the Board reviewed a post-permitting operating plan that is more similar to Prairie State's. That case dealt with a similar requirement to develop a startup/shutdown plan as in *Tallmadge* and *RockGen*, but the permit in *Indeck-Niles* did not allow for an exemption from the BACT limits if the startup/shutdown plan was followed.

⁸⁰ This deadline may be extended for one year, but only if Prairie State submits an interim report detailing the need for additional data and commits to at least two more performance tests. Permit Condition 2.1.17.b.ii.B (INTV Ex. 1).

The Board recognized this important fact, noting that the plan in *Indeck-Niles* was an optimization plan, like Prairie State's, and not a substitute for BACT limits, like was the case in *Tallmadge* and *RockGen*. *Indeck-Niles*, slip op. at 15. On that basis, the Board distinguished *Tallmadge* and *RockGen* and expressly limited the significance of those cases to permits that provided blanket exemptions to PSD-required emission limits:

In these circumstances, it would be inappropriate to construe *Tallmadge* and *RockGen* as establishing bright-line rules for each and every case in which the PSD permit contains a startup/shutdown emissions minimization plan. Rather, because those decisions focused on circumstances in which emissions during startup and shutdown were completely exempted from BACT, they have greatest significance in that context or in cases where serious other concerns are raised about the scope of BACT coverage during startup and shutdown.

Id. Of course, Prairie State's Permit contains no such blanket exemption for PM emissions during startup and shutdown, *see infra* at Section XX, or during the optimization period.

Moreover, the Prairie State plan is not an operating plan that will regulate facility operations for eternity by supplanting PSD limits that were established through the permitting process. Instead, this is an optimization program that seeks to make the PM limit more stringent if actual data proves that it is possible to do so. EPA has often endorsed the use of such plans. *See, e.g., Pennsauken County*, 1988 EPA App. LEXIS at *13-14 (upholding an optimization condition in PSD permit that involved the performance of a test program, on an operating facility, to determine ways to minimize ammonia and NO_x emissions). Furthermore, the Board has upheld permits requiring such plans even when the requirement for the optimization plan was not part of the draft permit, and when the plan itself was not made available for public review. *AES Puerto Rico*, 8 E.A.D. at 349. As was the case in *AES Puerto Rico*, IEPA responded to public comments challenging the validity of a total PM limit by including a new requirement in

the final permit for an optimization plan. IEPA simply followed sound Board precedent and Petitioners have failed to prove the agency's actions were clearly erroneous.

The public had an opportunity to comment on the PM limit, they did so, and IEPA responded by requiring an optimization plan to make the Permit more stringent.⁸¹ The process worked as it should and resulted in a more stringent Permit. Petitioners' desire for an additional round of public comments on the optimization plan is not what the law requires. The Petition must fail on this count.

E. The Filterable PM Limit is BACT.

Petitioners next argue that the filterable limit does not represent BACT because several source tests and permit limits for proposed plants demonstrate a lower limit is possible. Petition at 82-83. This argument either ignores IEPA's response to the data submitted or simply amounts to a complaint that IEPA's response is not "good enough" to satisfy Petitioners. Petitioners' burden, however, is to show that IEPA's response represents a clearly erroneous finding of fact or conclusion of law, or somehow implicates an important public policy question. Because the Petition does not add any new substantive information to refute IEPA's rational explanation of the filterable PM limit, it must fail on this count.

Petitioners offer again the same data submitted in the public comments as purported evidence that a lower filterable PM emission limit is possible.⁸² They admit, however, that IEPA

⁸¹ As discussed above, the Board has made it clear that petitioners have no ground to complain when a permitting agency tightens a permit limit in response to a public comment. *See supra* at 97.

⁸² Petitioners mention the recently issued permit for Newmont Mining facility in Nevada. Data related to this facility, however, was not submitted during the public comment period. As discussed below, *see infra* at 193, n.108, Board precedent is clear that IEPA is under no obligation to consider or respond to such information.

responded to these comments by offering two explanations for why the data submitted do not establish a lower BACT limit: (1) the limits or source tests do not reflect an adequate safety margin to account for the variability in the data; and (2) the use of PM CEMS at Prairie State increases the rigor of the PM emission limit so that the undemonstrated emission limits offered from other facilities are not directly transferable to establish BACT limits here. Petition at 83; *see* RS No. 162 at 75 (INTV Ex. 4). Petitioners apparently ignore a third reason articulated by IEPA: that specific circumstances at other facilities, such as boiler type or specific coal quality, may contribute to those facilities reporting emission rates not achievable at Prairie State. RS No. 170 at 78 (INTV Ex. 4). Board precedent is clear that once IEPA offers a rational response to comments, the burden is on Petitioners to show that this response was clearly in error. *See, e.g., LCP Chems.*, 4 E.A.D. at 664 (“[I]t is not enough for a petitioner to rely on previous statements of its objections, such as comments on a draft permit; a petitioner must demonstrate why the Region’s response to those objections (the Region’s basis for its decision) is clearly erroneous or otherwise warrants review.”).

Attempting to carry their burden, Petitioners offer three reasons why IEPA’s response is deficient. The first is that the PM CEMS at Prairie State will not be used to determine actual compliance, but will be used only for “compliance assurance monitoring.” While this may be the case,⁸³ Petitioners do not explain why this distinction matters. In fact, IEPA itself noted this distinction, but explained that “[e]ven if these [CEMS] systems are only used for compliance assurance monitoring, they will [still] potentially increase the rigor of the PM emission limit set

⁸³ As discussed in detail below, EPA has formally recognized and approved PM CEMS for use as compliance assurance monitors. *See infra* at 164.

for the boilers.” RS No. 162 at 75 (INTV Ex. 4). Petitioners offer nothing to refute this accurate statement and, thus, fail to carry their burden.

Furthermore, IEPA’s justification for increased scrutiny when setting a PM BACT limit that will be monitored by CEMS is consistent with EPA’s position on this point. EPA has recognized that the variability seen in PM emissions data from stack tests should be considered when trying to establish a BACT limit that will be monitored with PM CEMS. As the Agency stated during its rulemaking for the PM CEMS performance specification and test procedures, promulgated at 69 Fed. Reg. 1786 (Jan. 12, 2004):

PM CEMS can be sensitive to emissions variability on a real-time basis. Neither periodic short-term manual testing nor operational parametric monitoring would provide an adequate picture of this variability for standard setting purposes. Only PM CEMS data collected over a relatively long period of time would provide data sufficient for the statistical analyses necessary for establishing achievable continuous compliance emission limits.

Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring, EPA - 454/R-00-039 at 5-6 (Record cite: A-2001-10-II-A-2) (INTV Ex. 75). This rationale applies equally to the undemonstrated permit limits offered by Petitioners.

Given this rationale for why undemonstrated permit limits and source tests data cannot directly establish an emission limit that will be monitored by a PM CEMS, it is not clear why using CEMS for compliance assurance purposes, as opposed to determining actual compliance, makes the data any more transferable. CEMS provide continuous data to verify the facility is operating properly and ensure the prompt repair and reporting of any malfunction. In this sense, it is inconsequential whether CEMS are used for compliance determinations or compliance assurance monitoring; they have the same effect when evaluating whether data from another facility can be transferred to Prairie State. A similar safety factor must be added to data from

other facilities to account for the “real time” measurement of PM emissions on a continual basis. Petitioners fail to offer any rational reason why IEPA’s explanation is clearly erroneous.

Petitioners’ second argument is that IEPA’s “safety factor theory” is flawed because the variability seen in PM data at other plants is caused by those plants using different types of coal. Petitioners argue that Prairie State will not experience this variability because it is a mine-mouth facility and will use the same type of coal, thus, a safety factor is unnecessary. This argument is unproven and untrue. The only “evidence” offered to show that the variability seen at other facilities is due to burning different coal is a Department of Energy website that summarizes monthly deliveries of fossil fuels to non-utility generating facilities. Petition at 84. Petitioners make no attempt to show that any of the examined facilities were burning different fuels on the days source tests revealed high variability in the reported emissions. Consequently, Petitioners’ argument is woefully inadequate. It is Petitioners’ burden to prove their case. Neither the Board, IEPA, nor PSGC has a duty to track down coal quality data to refute or verify Petitioners’ theory regarding the variability of PM emissions. IEPA already reviewed this information and concluded that the variability warranted the use of a safety factor when assessing PM source tests data. RS Nos. 163-64 at 76 (INTV Ex. 4).

Just as Petitioners have failed to support their theory regarding the use of different coals at other facilities, they have also failed to prove that the coal burned at Prairie State will be so similar in quality as to eliminate the need for a safety factor. In fact, with respect to the sulfur content, Petitioners acknowledge that the coal used at Prairie State will vary. Petition at 34; *see also* RS No. 107 at 51 (INTV Ex. 4) (responding to Petitioners’ comment that “[t]he mine will produce a range of coal qualities.”). One may question how Petitioners can be so certain that the sulfur content of the coal will vary greatly, while at the same time be equally certain that the ash

content will remain uniform, and make both assertions without cites to actual coal quality data. In any event, Petitioners have not established clear error by IEPA.

Petitioners' final attack on IEPA's explanation for the filterable PM limit argues that IEPA is not authorized to apply a safety factor to source tests from other facilities because the current Permit is distinguishable from one of the many cases in which the Board authorized a safety factor — *Steel Dynamics*, 9 E.A.D. at 188. This bizarre argument rests on the premise that a safety factor is acceptable only if the Permit also requires the most stringent PM limit ever imposed. Petition at 85. Clearly this is not the case. Petitioners simply ignore the many other Board decisions that recognized the validity of a safety factor on facts dissimilar to *Steel Dynamics*. See *supra* at 77-79. Beyond this misplaced reliance on *Steel Dynamics*, Petitioners merely reiterate their argument that IEPA did not explain in greater detail the safety factor that justified its rejection of lower theoretical limits. IEPA did, however, explain its rationale in detail. And, as discussed numerous times before, it is Petitioners' burden to explain why IEPA's use and justification of a safety factor is a clear error in fact or law. Because they have not carried this burden, Petitioners' argument must fail.

F. IEPA's Enforcement Approach is Reasonable and Will Be Effective.

Petitioners also argue that the current enforcement scheme does not guarantee compliance with the Permit's PM limits. Three reasons are given for why the PM limits are not enforceable: (1) compliance stack testing is not frequent enough to ensure continual compliance; (2) although PM CEMS are required for compliance assurance purposes, they are not required for actual compliance demonstration; and (3) Petitioners could not locate any Permit conditions requiring Prairie State to define and maintain the relationships between the appropriate operating

conditions and the PM emissions. Petition at 85-86. As discussed below, these arguments are without merit.

At the outset, it is important to recognize that the Permit's enforcement scheme is multi-layered, with each requirement working together to ensure compliance. First, periodic stack tests are required to determine compliance with the PM emission limits. Permit Condition 2.1.8 (INTV Ex. 1). During such tests, operating parameters are also established and the facility is required to record and report them to IEPA. *Id.* at 2.1.8(c)(ii) and 4.2(c). Then, the Permit requires Prairie State to install and maintain systems to monitor these operating conditions during normal operations (*id.* at 2.1.10(c)), to keep records of the operating conditions (*id.*), and report deviations from the standard operating conditions to IEPA (*id.* at 2.1.12, 2.1.13, 4.3, and 4.5). Finally, PM CEMS are also required for compliance assurance monitoring purposes. *Id.* at 2.1.10(d); *see also* RS No. 160 at 74 (INTV Ex. 4) (explaining the relationship between the stack tests and the PM CEMS). This scheme provides IEPA with multiple methods to ensure compliance with the PM limits. Despite these measures, and without any legal authority in support, Petitioners demand more.

1. Prairie State's stack testing requirements will ensure continuous compliance.

Petitioners' first argument against the enforceability of the PM limits contends that the required periodic stack testing will not assure compliance on a continual basis.⁸⁴ Petitioners

⁸⁴ Part of Petitioners' argument appears to be that IEPA is deferring testing requirements until the Title V permit that PSGC must obtain at a later date. Petition at 85. The basis for this allegation is an IEPA response explaining that certain tests desired by Petitioners are "inappropriate for the construction permit." RS No. 175 at 79 (INTV Ex. 4). Petitioners latch onto this one excerpt as purported evidence that IEPA is foregoing certain testing necessary to enforce PSD limits. As explained in the text above, however, this is entirely untrue. The Permit contains multiple layers of enforcement measures to ensure this PSD Permit's limits are enforced. *Id.* at 74, No. 160. Petitioners' contrived argument is without merit.

assert that stack tests are too infrequent and will not accurately represent emissions during routine operating conditions. Petition at 85-86. IEPA responded to these exact allegations in the Responsiveness Summary. Petitioners simply ignore these valid and rational responses.

In the Responsiveness Summary, IEPA first described the sufficiency of the required number of stack tests, and then discussed how PM CEMS will be used to assure compliance. RS No. 160 at 73-74, No. 161 at 74-75, No. 175 at 79-80 (INTV Ex. 4). The Agency also explained the requirement that stack tests be conducted at or near capacity so that the pollutant control systems are tested under extreme operating conditions, giving comfort that if emission limits can be met during stack tests, they should be met at other, less strenuous times. *Id.* at 74-75, No. 161. Furthermore, IEPA explained how operating conditions are established during the stack tests, that these operating conditions will be continuously monitored, and that the facility is required to operate consistently with those conditions during normal operations. *Id.* at 74-75, Nos. 160-61.

This response is reasonable. As discussed previously, Petitioners must do more than simply reiterate their comments. *Knauf I*, 8 E.A.D. at 127. Their burden is to explain why IEPA's explanation is factually or legally insufficient. *Id.* Petitioners offer nothing to carry this burden.

2. The use of PM CEMS for compliance assurance monitoring is reasonable.

Petitioners next argue that PM CEMS should be used to demonstrate compliance. As the Permit stands now, PM CEMS are required "for the purpose of compliance assurance monitoring." Permit Condition 2.1.10.d (INTV Ex. 1). This role is not without justification. As IEPA explained in the Responsiveness Summary, PM CEMS are used in this manner,

because of the limited experience with such monitoring systems, especially for boilers with high-efficiency SO₂ scrubbers and high-

moisture levels in the stacks. This will likely prevent use of PM continuous monitoring systems that rely on optical principles to quantify the level of PM in the exhaust. It also means that significant uncertainty may be inherent in the correlation curve(s) developed with the system that is selected. This will certainly be the case if condensable PM is converted into filterable PM in the monitoring system, so that the systems measure more than filterable PM.

RS No. 174 at 79 (INTV Ex. 4).

Clearly, EPA articulated a reasonable rationale for using PM CEMS in the chosen manner. This rationale is supported by language in the Preamble to EPA's performance specification and test procedures for PM CEMS, as promulgated at 69 Fed. Reg. 1786 (Jan. 12, 2004). Although that rulemaking was intended to apply to situations where an agency required PM CEMS for compliance demonstration purposes, EPA specifically "recognize[d] the advantages of using PM CEMS as an indicator of compliance" for the purposes of compliance assurance monitoring. 69 Fed. Reg. 1786, 1789 (Jan. 12, 2004). Furthermore, EPA stated that, "[w]e do not rule out the possibility that PM CEMS may not be appropriate for certain source operating conditions or emission characteristics" and "PS-11 and QA Procedure 2 do not prohibit the use of PM CEMS as indicators of control device performance or emission levels to satisfy the requirements of part 64 [compliance assurance monitoring requirements]." 69 Fed. Reg. 1790-91. There is no doubt that EPA recognized that PM CEMS may be more appropriate for compliance assurance purposes due to the high variability seen in PM emissions data. See *supra* at 161 (recognizing that the variability in PM stack tests data warrants that such data should not be used to establish emission limits that must be continually met, as monitored by PM CEMS). Clearly, EPA believes that the use of PM CEMS for compliance assurance monitoring is an appropriate and reasonable use of this technology.

In response, Petitioners offer no legal arguments or evidence to refute IEPA's rationale, even though it is their burden to do so. Instead, Petitioners simply request that the Permit be remanded "to clarify that the PM CEMS can be used to determine compliance with the filterable PM/PM10 limit." Petition at 86. Petitioners' unsupported request is not what the law requires. Petitioners must explain why IEPA's decision to use PM CEMS as compliance assurance monitors is clearly erroneous or contrary to law. Because they cannot and have not made this demonstration, the Petition must fail on this count.

3. The Permit requires Prairie State to define proper operating conditions and continuously operate under such conditions.

Finally, Petitioners claim that they cannot locate any Permit conditions requiring Prairie State to define the relationship between the monitored operational data and PM emissions, nor can they find a condition requiring Prairie State to be operated at optimum conditions. Petitioners, however, simply do not accept the multiple, interrelated conditions that render the PM limit enforceable. As discussed above, the Permit contains requirements for PSGC to report operating conditions during stack tests — thus establishing the relationship between proper operating parameters and emissions — and to install monitoring devices to ensure these conditions are maintained. *See supra* at 163 (discussing Permit Conditions 2.1.8 and 2.1.10). These conditions will be correlated to specific emissions rates, which will be integrated into the compliance assurance monitoring plan as part of the facility's required Title V permit. CEMS are required to ensure Prairie State operates continuously at these levels. The Permit requires that all of this must be reported to IEPA. Permit Conditions 2.1.8.c, 2.1.12, 2.1.13, 4.2.c, and 4.5 (INTV Ex. 1). Plus, the Permit contains an independent requirement that the facility be operated in such a manner as to minimize emissions at all times. *Id.* at Condition 2.1.6. Everything necessary to determine compliance with the PM limits is contained in the Permit. Defining the

“relationship” is a function of CAM, which will be developed in the Title V permit. The Petition must fail on this count.

XIII. DRY COOLING IS NOT BACT.

Petitioners argue that IEPA did not conduct and document a reasoned analysis in rejecting dry cooling as BACT for Prairie State. The argument fails because IEPA's analysis was appropriate. Petitioners have not met their burden of showing that IEPA's response to comments about dry cooling was clearly erroneous or otherwise warrants review. Petitioners merely repeat the comments and argue in vain that IEPA failed to substantiate its response.

The Record reflects that IEPA carefully considered the comments with respect to dry cooling:

These comments do not provide an adequate basis to require dry cooling for the proposed plant. Dry cooling is certainly a demonstrated technology. However, use of dry cooling in areas where water resources are limited and the relative humidity is low (e.g., weather conditions in which wet cooling would consume comparatively more water), does not demonstrate that dry cooling is appropriate for the proposed plant. This is because of the additional power required by dry cooling and its effect on the energy efficiency of the proposed plant, which are overlooked by this comment. The additional power required for dry cooling would act to increase emissions of pollutants other than PM. If dry cooling would lower the plant's efficiency by more than a few percent, the net effect of using dry cooling would also be to increase emissions of PM, as well as other pollutants. As such, dry cooling is a less-effective technology as related to emissions because its use would act to increase overall emissions of pollutants and CO₂ from the plant.... While technically feasible, it is not appropriate to be required of the proposed plant.

RS No. 246 at 110-11 (INTV Ex. 4). IEPA's response was sufficient to articulate the basis of its decision, which is all that is required. *See, e.g., Kendall New Century*, slip op. at 13-14 n.13 (declining to grant review where agency's general explanation in its response to comments was sufficient to articulate the basis for its decision). IEPA's decision is also consistent with the decision the Michigan Department of Environmental Quality reached in a similar situation. *See In re South Shore Power, L.L.C.*, PSD Appeal No. 03-02, slip op. at 27 (EAB June 4, 2003)

(denying review where Petitioners failed to respond to permitting agency's explanation of the myriad of factors "that supported its decision to approve wet rather than dry cooling").⁸⁵

Petitioners' sole argument is based on their mistaken view as to IEPA's obligation to respond to comments. Petitioners believe IEPA was required to discuss dry cooling exhaustively in the Responsiveness Summary. That view is inconsistent with previous decisions by the Board. *See NE Hub Partners*, 7 E.A.D. at 583 (response does not have to include detailed findings and conclusions); *Mecklenburg Cogeneration*, 3 E.A.D. at 494 n.2 ("[P]ermit issuer does not commit clear error if it carefully considers the potentially transferable technologies in the context of a particular project ... but its level of consideration on or documentation nonetheless falls short of matching the level that would be expected, for example, if the permit issuer were rejecting a top technology."); *Steel Dynamics*, 9 E.A.D. at 193-95 (rejecting argument that response was conclusory and lacking in any supportive data or analysis in the administrative record where Petitioners did not give adequate reason to question agency's decision).

Petitioners fall far short of their burden. They have not established any error, much less a clear error that materially affected the permit decision: "For a remand, there must be a compelling reason to believe that the omissions led to an erroneous permit determination — in other words, that they materially affected the quality of the permit determination." *Mecklenburg*

⁸⁵ It is also worth noting that EPA determined that dry cooling is not the best technology available in its Clean Water Act § 316(b) rulemaking. 66 Fed. Reg. 65256, 65282 (Dec. 18, 2001). EPA addressed the same factors cited by IEPA. EPA estimated that the energy penalty of a dry cooled plant in a hot environment at peak summer conditions could be as much as 19.4 percent. EPA concluded that the cost of dry cooling is more than three times the cost of wet cooling. The capital costs for construction and the operating costs are significantly higher than the comparative cost for wet cooling systems. As a result of its study, EPA concluded that dry cooling does not represent the "best technology available" for minimizing adverse environmental impacts.

Cogeneration, 3 E.A.D. at 494 n.3. Petitioners have failed to show that the permit determination was materially affected by the alleged lack of supporting information. “A rule of reason proportionate to the technology’s track record necessarily governs how much detail and documentation must go into consideration of a particular technology.” *Id.* Petitioners’ comments did not prove that dry cooling is the technology of choice. Pointing to a few examples where dry cooling has been selected (apparently for reasons other than BACT) did not necessitate a more detailed response by IEPA.⁸⁶ Review of the Permit on this ground should be denied.

⁸⁶ To PSGC’s knowledge, no facility has been required to use dry cooling as a result of a BACT analysis.

XIV. CULPABILITY ANALYSES ARE PROPER UNDER CAA.

Relying on the wrong modeling, Petitioners claim that emissions from Prairie State will cause or contribute to violations of the NAAQS and, therefore, it was legal error for IEPA to issue the Permit. To support their position, Petitioners argue that the December 9, 2003 modeling predicted exceedances of the SO₂ and PM NAAQS and that the use of culpability analyses to address those exceedances is contrary to the CAA.⁸⁷ Petitioners also argue that IEPA's response to comments to that effect was *post hoc* rationalization. According to Petitioners, this is an important policy issue that warrants review by the Board. In general, Petitioners repeat their comments and do not show that IEPA's response is erroneous.

IEPA did not commit legal error in issuing the Permit to PSGC. The relevant modeling and culpability analysis, conducted consistent with EPA and IEPA regulations and policy, show that emissions from Prairie State will not cause or contribute to a NAAQS violation. This is also not an important policy issue warranting review as the Board has considered and rejected similar arguments in the past. *See, e.g., AES Puerto Rico*, 8 E.A.D. at 343-44. Therefore, review should be denied.

A. IEPA's Decision Was Rational and Supported by EPA Regulations and Policy.

IEPA evaluated the NAAQS modeling and culpability analyses submitted by PSGC and performed its own modeling for confirmation. *See, e.g., RS Nos. 264-265 at 119-20 (INTV Ex. 4); Project Summary at 17-22 (INTV Ex. 2)*. IEPA concluded that emissions from Prairie State will not cause or contribute to a NAAQS violation. *RS Nos. 264-265 at 119-20 (INTV Ex. 4)*.

⁸⁷ As the name suggests, a "culpability analysis" determines which source or sources are causing or contributing significantly to an exceedance predicted by modeling. They are used to determine whether the source at issue (here, Prairie State) is causing or contributing to the exceedance.

Petitioners attempt to cast doubt on IEPA's determination by relying on the modeling submitted to IEPA up to December 2003 and ignoring the corrected modeling submitted in July 2004 in response to comments. Petition at 90. The 2004 modeling supersedes the previous modeling and demonstrates compliance with the NAAQS consistent with EPA's and IEPA's requirements. Modeling Addendum 2 (INTV Ex. 76).

To assess the impacts of emissions from Prairie State, PSGC conducted several modeling runs throughout the permitting process as new information was received. Modeling was first submitted with the original Application in October 2001. It was superseded by the modeling submitted with the October 2002 Application, which responded to questions from IEPA on the first Application. Throughout 2003, PSGC submitted further revisions to the modeling as new information was provided or requested by IEPA. The 2003 modeling culminated in the December 9, 2003 submission, which incorporated the short-term emission rate for SO₂.

IEPA reviewed the modeling submitted by PSGC and performed its own modeling to confirm the results. IEPA presented its evaluation of PSGC's modeling in the Project Summary issued with the draft Permit. Project Summary at 17-22. During the comment period, PSGC was made aware of concerns with the modeling. *See, e.g.,* Dynegy Comments (INTV Ex. 77). Commenters expressed concerns about the emissions inventories used in the modeling and pointed out that the incorrect anemometer height for the meteorological data had been used. *Id.* PSGC worked closely with IEPA to correct any concerns with the emissions inventories. *See, e.g.,* Email from Jeff Sprague, IEPA, to Dwain Kincaid, Kentuckiana (May 24, 2004 at 4:11 p.m.) (INTV Ex. 78) (enclosing spreadsheet of SO₂ inventory with corrections by IEPA). PSGC revised the modeling with the correct anemometer height and revised inventories and submitted that modeling in July 2004. *See* Modeling Addendum 2 (INTV Ex. 76).

The July 2004 modeling did predict exceedances of the short-term SO₂ NAAQS. *Id.* at 7. The modeling did not predict exceedances of the PM NAAQS.⁸⁸ *See id.* at 10. For SO₂, PSGC performed a culpability analysis and demonstrated that Prairie State would not cause or contribute to the exceedances. *Id.* at 7-9. Modeling Addendum 2 sets forth the process PSGC followed in the culpability analysis. *Id.* PSGC identified all the receptors (spatially and temporally) where exceedances were modeled (*i.e.*, high-second-high concentrations in excess of the NAAQS) taking into account background.⁸⁹ PSGC next identified the receptors (spatially and temporally) where emissions from Prairie State caused modeled concentrations of 4.99 µg/m³ or greater.⁹⁰ Finally PSGC compared the receptors where exceedances were predicted to the receptors where concentrations due solely to emissions from Prairie State exceeded the SIL. As the evaluation shows, the receptors did not coincide; thus demonstrating that Prairie State was not culpable for the NAAQS exceedances. *Id.* Petitioners have not shown, nor attempted to show, that the corrected modeling is in error. Instead they argue that the culpability analysis is contrary to the CAA.

⁸⁸ While exceedances of the PM NAAQS were predicted based on the modeling submitted through the end of 2003, the modeling did not predict any exceedances when it was rerun with the corrected anemometer height and emissions inventories. *See* Modeling Addendum 2 (INTV Ex. 76).

⁸⁹ Petitioners confuse the use of the high-second-high modeled concentration to determine compliance with the NAAQS with the use of the source's maximum predicted concentration to compare to the SIL. As explained in Modeling Addendum 2, in determining whether Prairie State would contribute to a modeled violation, the maximum concentration attributable to Prairie State at the receptor and time of the modeled exceedance is what is relevant and is what was considered in determining that the facility will not contribute to a violation. Modeling Addendum 2 at 8-9 (INTV Ex. 76). Petitioners incorrectly assert that the second highest concentration attributable to Prairie State was used in the culpability analysis. *See* Petition at 95.

⁹⁰ The 24-hour SO₂ Class II SIL is 5 µg/m³.

B. IEPA's Allowance of a Culpability Analysis to Demonstrate Compliance with the NAAQS is Consistent With the CAA.

Petitioners argue that IEPA cannot lawfully apply "significance" levels to determine whether or not emissions from Prairie State will contribute to a NAAQS violation (*i.e.*, a culpability analysis). Petitioners assert that this is an important policy issue the Board should review. Their argument is based on a novel and strained interpretation of the CAA and completely ignores the 25-plus years of EPA regulations, guidance, policy, and practice interpreting and applying the CAA in a contrary fashion. *See, e.g.*, 43 Fed. Reg. 26380, 26398 (June 19, 1978); 40 C.F.R. Part 51, App. S, § III.A.; Draft NSR Manual at C.52 (INTV Ex. 22). Moreover, Petitioners' argument is not supported by the plain language of the CAA.

1. Use of a culpability analysis is consistent with EPA guidance and regulations.

It has been EPA's longstanding interpretation of CAA § 165(a)(3) in regulations and guidance that a source does not "contribute to" an exceedance if its impact at the receptor is not significant. *See* 40 C.F.R. Part 51, Appendix W, § 11.2.3.2 (the determination of whether a source contributes to a violation of a NAAQS is based on the significance of its temporal and spatial contribution to any modeled violation). As succinctly stated by EPA in the 1990 Draft NSR Manual at C.52 and cited by IEPA: "The source will not be considered to cause or contribute to the violation if its own impact is not *significant* at any violating receptor at the time of each predicted violation." (emphasis added). This EPA position dates back to at least 1978 when the values defining significant, which were used by IEPA and PSGC, were provided. *See* 43 Fed. Reg. 26398 (June 19, 1978); *see also* Memorandum from Richard G. Rhoads, Director, Control Programs Development Division (MD-15) to Alexandra Smith, Director, Air & Hazardous Materials Division, Region X, Interpretation of "Significant Contribution" (December

16, 1980) (INTV Ex. 79). EPA formally adopted the significant levels in 40 C.F.R. Part 51, Appendix S, § III.A, precisely for the purpose for which they were used here.

EPA's longstanding interpretation is reasonable and is entitled to deference. *Alaska Dep't Envtl. Conservation*, 540 U.S. at 487 (longstanding interpretations are accorded particular deference). IEPA's reliance on that interpretation is reasonable and review of the Permit on this basis should be denied.

2. Petitioners' statutory argument is flawed.

In attempting to cobble together a statutory argument to support this claim, Petitioners distort the CAA. Petitioners cite § 110 of the CAA, which establishes the requirements for state implementation plans ("SIPs") to protect NAAQS. The specific provisions cited, however, pertain to the requirements of a SIP to address interstate impacts and do not support the position that the CAA precludes the use of SILs in determining whether a source contributes to a modeled violation. CAA §§ 110(a)(2)(D)(i)(I) and (II). Specifically, the Petitioners cite the following statutory language:

(2) ... Each such [SIP] shall —

(D) contain adequate provisions —

(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will —

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standards, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C of this subchapter to prevent significant deterioration of air quality or to protect visibility,

Id.

Given the actual language of the statute and the purpose of CAA § 110(a)(2)(D)(i)(II) — to prevent one state from interfering with another state’s implementation of its PSD program — it is not surprising that the concept of significant contribution does not appear in the provision. In any event, there is nothing in that provision that bars the use of culpability analyses.

3. SILs are applicable in attainment areas.

Attempting to avoid the inescapable conclusion that the use of SILs in culpability analyses are lawful, Petitioners argue that the use of SILs is appropriate in nonattainment areas where sources are required to have offsets, but not for PSD sources where offsets are not required. Petitioners, however, are mistaken as to the effect of the SILs in 40 C.F.R. Part 51, Appendix S and 40 C.F.R. § 51.165(b). The SILs are used to determine if sources located outside the nonattainment area would contribute more than a *de minimis* level at any location that does not meet the NAAQS. 40 C.F.R. Part 51, App. S III(a). If a source’s contribution is less than the SILs, PSD applies and, contrary to Petitioners’ argument, no offsets are required of that source to obtain a permit. *See* 40 C.F.R. § 52.21. Therefore, it would be irrational to permit the use of SILs in determining if a source will contribute to a violation in an existing nonattainment area where the air quality already exceeds the NAAQS, but not in determining if the source will contribute to a violation in an attainment area. EPA apparently recognized this in establishing its policy and regulations for determining whether or not a source contributes to a predicted exceedance. Neither EPA nor IEPA makes the distinction Petitioners are advocating.

4. Use of culpability analysis is not a policy issue warranting review.

Petitioners argue that this is an important policy issue and therefore the Board should consider it. The Board, however, has already considered the use of the SILs in culpability analyses in prior cases and determined that they are acceptable. *See AES Puerto Rico*, 8 E.A.D.

at 343-44 (concluding that where the proposed facility has modeled impacts below the SILs, the facility would not be considered a cause or contributor to a NAAQS violation); *see also Hadson*, 4 E.A.D. at 261 (“EPA has a longstanding policy of using significance levels to determine whether a proposed source will cause or contribute to an increment violation.”).⁹¹ Moreover, this is a site-specific analysis. Therefore, the use of SILs to determine whether a source contributes to a modeled exceedance is not a policy issue that warrants review by the Board.

In sum, while Petitioners may disagree with EPA’s and IEPA’s approach, they have failed to show that EPA’s longstanding interpretation of the CAA is clearly erroneous or contrary to law.

C. IEPA’s Decision Was Not a *Post Hoc* Rationalization.

Petitioners’ argument that IEPA’s response is a *post hoc* rationalization is contrary to the Record. As discussed above, culpability analyses have been used for years by EPA and state permitting agencies to determine if a source contributes to a modeled exceedance. Moreover, IEPA discussed the use of the culpability analysis in its Project Summary issued with the draft Permit. Project Summary at 20 (INTV Ex. 2).

Petitioners’ assertion that IEPA rejected the modeling methodology is contrary to the Record. IEPA did not reject the methodology used to demonstrate compliance with NAAQS. The agency merely explained that a modeled exceedance does not necessarily translate into an actual exceedance because of the conservative constraints placed on the modeling, such as using permitted emissions instead of actual emissions in the emissions inventory. RS No. 49 at 24-25, No. 264 at 119-20 (INTV Ex. 4). For example, IEPA noted that the Baldwin plant actually emits

⁹¹ This refers to the requirement to demonstrate compliance with increment in § 165(a)(3) of CAA. The language is the same with respect to NAAQS. *See* 43 Fed. Reg. 26398 (June 19, 1978).

approximately 200,000 tons less of SO₂ than it is permitted to emit. *See* Kroack Letter (INTV Ex. 51). IEPA discussed this issue because of its obligation to investigate and remedy modeled exceedances. *See* RS No. 264 at 119-20 (INTV Ex. 4). That obligation, however, does not preclude, as suggested by Petitioners, IEPA from issuing a permit for Prairie State if it is satisfied that Prairie State is not contributing to the modeled violations. *Id.* at 122, No. 269; Draft NSR Manual at C.52 (INTV Ex. 22).

IEPA also does not cite page C.28 of the Draft NSR Manual, as asserted by Petitioners. Instead, it is the Petitioners' comment that cites C.28. IEPA cited C.52 as support for its decision to allow the use of the SILs, consistent with past IEPA and EPA practice, to determine if a source's contribution is significant. RS No. 267 at 121 (INTV Ex. 4).

For the foregoing reasons, review should be denied.

XV. SO₂ CULPABILITY ANALYSIS WAS NOT FLAWED.

Petitioners argue in the alternative that, assuming culpability analyses are lawful, PSGC's SO₂ culpability analysis was flawed and thus the Permit should not have been issued. In making this argument, Petitioners merely repeat their comment and ignore IEPA's response. They do not explain why IEPA's response is clearly erroneous or otherwise warrants review. In fact, they argue that IEPA did not respond at all, which is clearly refuted by the Responsiveness Summary. RS No. 271 at 123-24 (INTV Ex. 4). They also ignore the subsequent modeling submitted in July 2004 in response to comments, which indicates Prairie State is not a significant contributor at any receptor where a NAAQS exceedance is predicted, and instead focus entirely on the December 2003 modeling.⁹² See Modeling Addendum 2 at 8-9 (INTV Ex. 76) (showing that the maximum emissions from Prairie State do not exceed 4.99 µg/m³, the threshold used in the culpability analysis);⁹³ *id.*, App. D, 1989 24 Hr SO₂ Culp. Analysis.xls (INTV Ex. 80) (comparison of receptors exceeding 24-hour SO₂ NAAQS and Prairie State emissions exceeding 4.99 µg/m³). Because Petitioners fail to refute IEPA's response and the additional modeling, review should be denied.

Petitioners acknowledge that IEPA summarized the comments in Response No. 270 but still argue that IEPA did not respond to the comment. Petition at 97. Their argument completely ignores Response No. 271, which clearly addresses the concerns raised with respect to the December 2003 modeling:

⁹² PSGC is not suggesting that Petitioners are correct with respect to the December 2003 modeling. They are not. PSGC is focusing on the July 2004 modeling because it is the relevant modeling for IEPA's decision as it corrected problems with the previous modeling identified during the comment period.

⁹³ The short-term SO₂ SIL is 5 µg/m.

Prairie State's SO₂ culpability analysis is not "flawed" and, in fact, the analysis demonstrates that Prairie State's emissions will not cause or contribute to modeled violations of the 3-hour and 24-hour SO₂ NAAQS. The coarse grid and fine grid analyses, as performed, provide an ample basis for determining NAAQS compliance and culpability. The "event processor" file that was based upon 1990 meteorological data does include time and receptor combinations in which the aggregate contribution of Prairie State's units exceeds the highest contributions indicated by Prairie State in Table 2 of the December 9, 2003 submittal. However, these contributions are for the highest concentrations at these receptors, and not the second highest concentrations. It is the second highest concentration that are compared with the 24-hour SO₂ NAAQS and are the basis for determining whether Prairie State's emission units contribute significantly to a modeled exceedance.

RS No. 271 at 123-24 (INTV Ex. 4).

IEPA goes on to state that the December 9, 2003 submittal, upon which Petitioners' issue is based, "was later superseded by a modeling analysis dated July 12, 2004 (Prairie State Generating Station Modeling Addendum No. 2), that included updated SO₂ culpability results, as a result of newly incorporated NAAQS inventory updates and a corrected anemometer height for the meteorological data sets." *Id.* As indicated above, the updated culpability analysis indicated that Prairie State's contribution was not significant at any receptor predicting an exceedance of the SO₂ short-term NAAQS. Petitioners have offered nothing to refute the subsequent modeling and analysis or IEPA's response.

As IEPA clearly responded to the comment and Petitioners have not refuted that response, or even acknowledged it or the subsequent modeling, review should be denied.

XVI. APPROPRIATE SO₂ EMISSIONS RATES WERE MODELED.

In their last issue with respect to the SO₂ NAAQS modeling, Petitioners argue that IEPA erred by not requiring PSGC to revise the short-term SO₂ NAAQS modeling to incorporate a greater short-term SO₂ emission rate for the Warren G. Murray Development Center ("Warren G. Murray"). Petition at 97-98. In making this argument, Petitioners again ignore IEPA's Response No. 271 and make a mistaken assumption regarding the SO₂ short-term NAAQS modeling. Petitioners have failed to show, as they must, that IEPA's response is clearly erroneous. They have not even addressed it at all. Therefore, review of this issue should be denied.

As indicated in Response No. 271 and contrary to Petitioners' assertion, PSGC did revise the SO₂ cumulative NAAQS modeling to include "newly incorporated NAAQS inventory updates and a corrected anemometer height for the meteorological data sets." RS No. 271 at 123-24 (INTV Ex. 4). The cumulative NAAQS modeling includes other SO₂ emission sources in the area, such as Warren G. Murray.⁹⁴ Emissions information regarding the other sources (such as emission rate, stack height, exit velocity and temperature) is normally obtained from an emissions inventory database maintained and provided to permit applicants by the state where

⁹⁴ PSGC was required to do cumulative modeling to demonstrate compliance with the SO₂ NAAQS because the preliminary modeling with just Prairie State's emissions predicted concentration above the applicable SILs. See Project Summary at 19 (INTV Ex. 2); Permit Application at 6-15 (INTV Ex. 6).

the source is located.⁹⁵ See Modeling Unit Checklist (Draft) at 4 (May 16, 2000) (Illinois PSD modeling guidance) (INTV Ex. 86). The database is maintained by IEPA and is what sources reasonably rely on when doing modeling. See *Appalachian Power*, 135 F.3d at 802 (permitting agency's modeling choice will be sustained if it bears a rational relationship to the characteristics of the data to which it is applied); see also *Hawaii Electric*, 8 E.A.D. at 106 (finding the issue of proper location for mixing height data highly technical in nature and, thus, deference to the permit issuer is appropriate absent compelling circumstance); *BP Cherry Point*, slip op. at 26-27 (indicating ambient air quality analysis is technical in nature and the Board generally defers to the permitting agency on questions of technical judgment). To respond to concerns raised at the beginning of the public comment period regarding the inventory,⁹⁶ PSGC worked closely with IEPA to ensure that it was using the most appropriate data in the modeling. See, e.g., Email from Jeff Sprague, IEPA, to Dwain Kincaid, Kentuckiana (May 24, 2004 at 4:11 p.m.) (INTV Ex. 78).

⁹⁵ In an email from Jeff Sprague, IEPA, to Dwain Kincaid, Kentuckiana (Nov. 18, 2003 at 12:39 p.m.) (INTV Ex. 81), Mr. Sprague indicated what SO₂ emission rates and exhaust gas velocities for Warren G. Murray should be used in the NAAQS modeling:

The allowable SO₂ emission rates for the BW boilers #1, #2, and #3 should be 91.99 tons/year, 164.94 tons/year, and 82.77 tons/year, respectively. The stack gas exit velocities should be 6.58 m/sec for each individual boiler stack.

These values correspond to the emission rates used in the modeling to demonstrate compliance with the NAAQS.

⁹⁶ Mr. Sprague provided this information in response to a request from Dwain Kincaid for confirmation of source information for Warren G. Murray, which was showing a predicted violation of the short-term SO₂ NAAQS. See Email from Dwain Kincaid, Kentuckiana, to Jeff Sprague, IEPA (Nov. 17, 2003 at 7:25 p.m.) (INTV Ex. 82).

Those concerns led to a revised inventory and revised SO₂ short-term modeling that was submitted to IEPA in July 2004.⁹⁷ See Modeling Addendum 2 (INTV Ex. 76).

Petitioners' argument appears to be based on the December 9, 2003 modeling and is the same as the comment they raised during the comment period.⁹⁸ It is evident that they completely disregard the revised modeling submitted by PSGC in July 2004 and referenced by IEPA in Response No. 271. Emissions from Warren G. Murray were not included in the July 2004 SO₂ short-term remodeling at all. As part of the remodeling, PSGC also reevaluated what sources should be included individually in the modeling by conducting a "10D analysis"⁹⁹ consistent with IEPA guidance.¹⁰⁰ Modeling Addendum 2 at 5 (INTV Ex. 76). Warren G. Murray is

⁹⁷ The revised inventory approved by IEPA contained the same emissions information for Warren G. Murray as included in Mr. Sprague's November 2003 email to Mr. Kincaid. IEPA states in Response No. 271 that "the values used [by PSGC] were the highest allowable values" from the "statewide pollutant inventory database." RS No. 271 at 123-24 (INTV Ex. 4).

⁹⁸ Petitioners do not specifically cite the modeling they are questioning. See Petition at 97-98. Based on the emission rate attributed to the modeling and the comment, PSGC presume that the modeling in question is that submitted on December 9, 2003.

⁹⁹ A 10D analysis is consistent with 40 C.F.R Part 51, Appendix W. Section 9.2.3 of Appendix W divides sources into two categories, nearby and other. Nearby sources are individually included in the modeling while other sources are assumed to be accounted for by the background concentration and are not individually modeled. To determine what sources in the inventory should be considered nearby, modelers use an analysis that takes into account the other source's emission rate and distance from the primary source. IEPA uses a 10D analysis while other states and EPA generally use a 20D analysis. A 10D analysis is more conservative than a 20D analysis (*i.e.*, more sources will be included in the modeling as nearby sources using a 10D analysis). In a 10D analysis, the distance (D) between Prairie State and the inventory source is multiplied by 10 and the result is compared to the emissions rate of the inventory source. If the emissions rate is greater than 10D, the source must be included in the modeling. There were no comments challenging the validity of using the 10D analysis to screen out sources in the modeling. Use of the 10D analysis was first discussed in the October 2002 Application at 6-25 to 6-26 (INTV Ex. 6) (referring to 10D analysis as 10Q analysis).

¹⁰⁰ Email from Matt Will, IEPA, to Kyle Lucas, Black & Veatch (July 10, 2001 at 3:02 p.m.) (INTV Ex. 83) (providing IEPA's 10-D Rule Modeling Guidelines).

located over 50 km away from the project and, according to IEPA's guidance, it can be eliminated from the modeling based on a 10D analysis. *See id.* The results of the 10D analysis indicated that Murray did not need to be modeled in the short-term NAAQS modeling. *Id.* at Appendix A (spreadsheets identifying the sources in the inventory and the results of the 10D analysis). Therefore, emissions from Murray were not included in the 24-hour SO₂ NAAQS modeling that was submitted in July 2004. Again, because Petitioners ignore the July 2004 modeling, they do not raise, much less demonstrate, that the 10D analysis eliminating Warren G. Murray from the inventory of sources modeled was flawed. That analysis makes the question of what short-term emission rate should be included in the modeling irrelevant.

In sum, based on the remodeling and the 10D analysis, IEPA's decision to accept the short-term SO₂ NAAQS modeling was not clearly erroneous. IEPA addressed the comment, and Petitioners have failed to offer any evidence to demonstrate that IEPA's decision was clearly erroneous or otherwise not in accordance with the law. Review of the Permit on this ground should be denied.

XVII. THE ADDITIONAL IMPACT ANALYSIS SATISFIED REGULATORY REQUIREMENTS.

Petitioners argue that IEPA committed error by accepting PSGC's use of the ozone NAAQS as a surrogate for the additional impact analysis required by 40 C.F.R. § 52.21(o). They contend such acceptance renders § 52.21(o) superfluous. That argument is contrary to fact and law. In making this argument, Petitioners appear to focus solely on the October 2002 Application and ignore subsequent submissions. PSGC submitted information showing compliance with the secondary NAAQS as just one part of a much broader additional impact analysis. Furthermore, IEPA did not interpret the additional impact analysis requirement in a manner redundant with the demonstration of compliance with the NAAQS. Other than misstating the facts and making a flawed legal argument, Petitioners have not refuted IEPA's explanation on this issue. Accordingly, review should be denied.

Section 52.21(o) of Title 40 of the C.F.R. requires an additional impact analysis to assess the impacts the proposed project plus any associated growth would have on visibility, soils, and vegetation. With respect to vegetation, the analysis is required to the extent the vegetation has "significant commercial or recreational value."¹⁰¹ *Id.* Prairie State included the required analyses in the applications submitted in October 2001 and October 2002, and provided additional supporting analyses on December 9, 2003 (Modeling Addendum 1 at 15-26) (INTV Ex. 61) and on June 18, 2004. Letter from Dianna Tickner, PSGC, to Chris Romaine, IEPA (INTV Ex. 84) (providing revised soils and vegetation modeling with corrected anemometer height). In the October 2001 and 2002 Applications, PSGC used a qualitative approach and concluded there would be no adverse impact on soil and vegetation because the predicted

¹⁰¹ IEPA specifically addressed this aspect of the analysis in its Responsiveness Summary. RS No. 298 at 135-36 (INTV Ex. 4).

ambient concentration would be below the secondary NAAQS. In the December 9, 2003 Modeling Addendum 1, PSGC went beyond compliance with the secondary NAAQS and compared the predicted concentrations with screening level information provided by EPA and IEPA.¹⁰² Modeling Addendum 1 at 15-25 (INTV Ex. 61). PSGC also qualitatively assessed the potential impacts emissions would have with respect to ozone. *Id.* at 20-21. IEPA specifically identified the December 9, 2003 analysis in its response to comments on this issue. RS No. 298 at 135-36 (INTV Ex. 4). In addition to the these submittals and analyses, PSGC performed a SLERA to evaluate impacts of selected compounds on threatened and endangered species and their habitat. IEPA considered the SLERA, which determined that the potential for long-term adverse effects on habitats or for chronic health effects on species is unlikely, in its evaluation of the impacts on soils and vegetation. *Id.*

IEPA also conducted its own analysis. IEPA considered its ozone modeling and concluded that it “contains information that indicates that the proposed plant would not threaten vegetation compared to the 8-hour ozone standard.” *Id.* at 136-37, No. 299. Clearly, Petitioners’ assertion that PSGC “submitted an additional impact analysis that simply concluded that a soils and vegetation additional impacts analysis need only look at whether the source will cause or contribute to a violation of the ozone NAAQS” (Petition at 98) is contrary to the Record. Petitioners also have not argued, much less shown, that vegetation of commercial or recreational value exists and is adversely affected, in the vicinity of Prairie State. Petitioners provide nothing

¹⁰² EPA, *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals* (EPA 450/2-81-078) (“EPA Screening Guidance”).

to refute the analyses performed by IEPA and PSGC, or to prove that they were inadequate as a matter of law.¹⁰³

Moreover, looking at the secondary NAAQS as part of the additional impact analysis is consistent with longstanding EPA policy as set forth in the Draft NSR Manual at D.4-D.5 (INTV Ex. 22):

For most types of soil and vegetation, ambient concentrations of criteria pollutants below the secondary National Ambient Air Quality Standards (NAAQS) will not result in harmful effects.

Petitioners have not shown why EPA's longstanding policy of considering the secondary NAAQS in an additional impact analysis is clearly erroneous.¹⁰⁴ The secondary NAAQS are "requisite to protect the public welfare." CAA § 109(b)(2), 42 U.S.C. § 7409(b)(2). As Petitioners point out, "welfare" includes soils and vegetation. Petition at 99; *see also* CAA § 302(h), 42 U.S.C. § 7602(h). EPA stated in its response to the remand of the 8-hour ozone NAAQS: "The new secondary standard was established to provide increased protection to the public welfare against direct O₃-induced effects on vegetation, such agricultural crop loss, damage to forests and ecosystems, and visible foliar injury to sensitive species." 68 Fed. Reg. 614, 615 (Jan. 6, 2003).¹⁰⁵ Thus, it is consistent with the CAA that the secondary NAAQS be

¹⁰³ Notably, in the additional impact analysis example in the Draft NSR Manual (also a mine mouth coal plant), there is no mention of ozone or its impacts on soils and vegetation as Petitioners contend here must be included. Draft NSR Manual at D.11 - D.12 (INTV Ex. 22). Petitioners have not shown that assessments of impacts caused specifically by ozone are required by the regulation.

¹⁰⁴ As previously discussed, longstanding policy is accorded particular deference. *Alaska Dep't Envtl. Conservation*, 540 U.S. at 487.

¹⁰⁵ Petitioners' argument that the 8-hour ozone NAAQS is not protective of vegetation should be ignored. As the Board has stated many times, a permit review is not the proper venue to challenge a NAAQS. *See, e.g., BP Cherry Point*, slip op. at 22.

considered when assessing impacts on soils and vegetation as they are established to protect soils and vegetation.

Petitioners attempt to sidestep the overwhelming evidence against their position by arguing that consideration of the NAAQS in performing the additional impact analysis makes the additional impact analysis redundant and is contrary to CAA § 160(1), 42 U.S.C. § 7470(1). The additional impact analysis, however, goes beyond the normal NAAQS analysis by looking at the future growth that may occur as a result of the plant and at pollutants for which there is no NAAQS. *See* 40 C.F.R. § 52.21(o); EPA Screening Guidance; Modeling Addendum 1 (considering impacts on soils and vegetation from various metals emitted). As to CAA § 160, that provision is part of Congress's stated purpose for enacting the PSD provisions in general, not the additional impact analysis requirement in particular. It does not in any way prohibit the use of NAAQS to evaluate the impact on soils and vegetation.

The record clearly reflects a rational basis for IEPA's decision to accept the additional impact analysis performed by PSGC along with its own ozone analysis as satisfying the additional impact analysis requirements. Petitioners may disagree with that decision, but such disagreement is not sufficient to justify review of the Permit, much less remand.

XVIII. IEPA'S USE OF THE 30-DAY NOX LIMIT FOR THE OZONE MODELING WAS NOT FLAWED.

Petitioners argue that IEPA committed error by using the proposed Prairie State 30-day NO_x emission rate for the ozone modeling instead of the 24-hour rate. They ignore IEPA's response as to the appropriateness of the NO_x limit used in the modeling and merely repeat the comment. To obtain review, Petitioners must explain why IEPA's response is erroneous or otherwise warrants review. Moreover, this is a technical issue and Petitioners have even a heavier burden for obtaining review. *Teck Cominco Alaska*, slip op. at 22 ("The Board traditionally assigns a heavy burden to petitioners seeking review of issues that are essentially technical in nature."); *accord BP Cherry Point*, slip op. at 26-27. To prevail on a technical issue, Petitioners must show that IEPA's decision lacked a rational basis. Review of this issue should be denied because Petitioners have failed to meet their burden.

IEPA performed the ozone modeling to demonstrate compliance with the NAAQS for Prairie State and other proposed or recently permitted power plants. RS No. 289 at 131-32; No. 293 at 133 (INTV Ex. 4); IEPA, "Assessing the Impact of the St. Louis Ozone Attainment Demonstration from Proposed Electrical Generating Units in Illinois" (Sept. 25, 2003) (INTV Ex. 85). IEPA conducted the modeling because it was "[c]ognizant of the resource requirements for an applicant to perform photochemical grid-based modeling" (RS No. 289 at 131-32 (INTV Ex. 4)) and that such models "are not best applied in trying to ascertain the impacts of a *single* source." *Id.* at 133, No. 293 (emphasis in original). IEPA's position is consistent with 40 C.F.R. Part 51, Appendix W § 8.2.6(b) that states:

Use of models incorporating complex chemical mechanisms should be considered only on a case-by-case basis with proper demonstration of applicability. These are generally regional models not designed for the evaluation of individual sources but used primarily for region-wide evaluations.

Appendix W also provides further discretion with respect to ozone modeling. *See, e.g.*, 40 C.F.R. Part 51, App. W, § 6.2.1(c) (stating that “model users should consult with the Regional Office to determine the most suitable approach on a case-by-case basis” when estimating impacts from a single source).

In the ozone modeling, IEPA used 0.08 lb/mmBtu (30-day rolling average) as the NO_x emission rate for Prairie State. RS No. 294 at 133-34 (INTV Ex. 4). As IEPA points out in the Responsiveness Summary, the NO_x emissions rates it used were consistent with previous modeling performed to demonstrate attainment for the Metro-East/St. Louis area. *Id.* at 133, No. 290. IEPA further points out that the NO_x emissions modeled are “about 40% higher than the greatest emissions that might be expected” and thus, the predicted impacts are overstated. *Id.* at 133-34, No. 294. IEPA’s conclusion is based on Prairie State’s final Permit limit of 0.07 lb/mmBtu (30-day rolling average) and emissions at Baldwin being reduced from 0.12 lb/mmBtu for proposed new units 4 and 5 and 0.15 lb/mmBtu for existing units down to 0.10 lb/mmBtu. *Id.* The Record provides a rational basis for IEPA’s decision as to what emission rate to use in its ozone modeling.

Petitioners do not even address IEPA’s response, as they must in order to obtain review. Instead, Petitioners cite to Table 9-2 of Appendix W and argue that it requires that short-term emission limits be used when modeling for short-term impacts. Petitioners completely ignore the other provisions in Appendix W that afford IEPA discretion when it comes to modeling, particularly for ozone modeling. *See, e.g.*, 40 C.F.R. Part 51, App. W, § 6.2.1(c).

Petitioners also ignore that ozone is unique with respect to the criteria pollutants. Ozone formation is a regional, long-term phenomenon. 62 Fed. Reg. 38855, 38887-88 (July 18, 1997). Unlike the other criteria pollutants, ozone is not directly emitted but is formed as “the result of

chemical reactions of VOC, NO_x, and oxygen in the presence of sunlight and generally at elevated temperatures.” 68 Fed. Reg. 614, 617 (Jan. 6, 2003). Therefore, there is not a direct correlation between NO_x emissions and the formation of ozone. Given the chemical reaction and the transportation of pollutants before ozone is formed, IEPA’s use of the 30-day rolling average limit, which is more indicative of what routine emissions will be, was rational. Modeling using the short-term limit at all times, would grossly overestimate the formation of ozone and not provide a realistic picture of the effect Prairie State’s emissions will have on that formation. That is why IEPA uses “average actual emissions of ozone precursors, rather than allowable emissions” when it conducts ozone modeling. RS No. 290 at 132 (INTV Ex. 4). As previously noted, Petitioners do not address this aspect of ozone at all. They blindly point to Table 9-2 and assert that IEPA is wrong without even considering the uniqueness of the pollutant in question.¹⁰⁶

As Petitioners have failed to show that IEPA’s decision to use the 30-day rolling average NO_x limit was clearly irrational, review on this issue should be denied.

¹⁰⁶ Also of note, 40 C.F.R. Part 51, App. W, § 11.2.3.2, NAAQS Analyses for New or Modified Sources, which provides guidance on determining whether a source locating in an attainment area will cause or contribute to a violation, makes no mention of ozone or PM_{2.5}, but does address all the other criteria pollutants. *See also* 40 C.F.R. Part 51, App. W, § 8.2.1 (ozone and PM_{2.5} again not considered the same as the other criteria pollutants).

XIX. THE NO_x LIMIT IS BACT.

Petitioners argue that the final Permit's NO_x emission limit of 0.07 lb/mmBtu is not BACT because IEPA failed to update its analysis and failed to consider the opinion of Matt Haber of EPA. The information offered by Petitioners, however, does not establish that a limit of 0.07 lb/mmBtu is clearly erroneous. Public commenters suggested a NO_x BACT limit of not more than 0.07 lb/mmBtu and IEPA agreed. IEPA conducted a comprehensive independent investigation to validate and document the final permit limit and to reject the unreasonably low limits suggested by commenters. The IEPA Responsiveness Summary contains 13 pages of detailed responses explaining why IEPA selected the 0.07 lb/mmBtu limit based on recent permit limits and why lower emission levels, including those suggested in the Petition, are not BACT. IEPA's decision is reasonable and supported by the Record.

A. Information in the Record Supports IEPA's NO_x BACT Determination.

The Record is replete with information supporting the NO_x limit of 0.07 lb/mmBtu. The original draft Permit issued for public comment contained a proposed 30-day BACT limit for NO_x of 0.08 lb/mmBtu. Draft Permit Condition 2.1.2.b.iii (INTV Ex. 5). This proposal drew significant public comment, including comments from some of the Petitioners, supporting a lower limit of 0.07 lb/mmBtu.¹⁰⁷ Based on these comments and information that other facilities had limits recently imposed at 0.07 lb/mmBtu, IEPA reduced the NO_x limit for PSGS to that lower level. See RS Nos. 125-156 at 57-72 (INTV Ex. 4).

¹⁰⁷ See, e.g., Letter from Brian Urbaszewski, American Lung Association; Kathy Andria, American Bottom Conservancy; Verena Owen, Lake County Conservation Alliance; Bruce Nilles, Sierra Club, and Jean Flemma, Prairie Rivers Network to IEPA Hearing Examiner and Administrator Michael O. Leavitt at 24 (Aug. 23, 2004) ("In addition, the recently settled Longview lawsuit resulted in an agreement to establish a NO_x limit of 0.07 lbs/mmBTU on a 30-day average and an annual limit of 0.065 lbs/mmBtu.") (INTV Ex. 33).

B. IEPA Investigated and Properly Rejected the “New” Information Submitted by Petitioners in April 2005.

Petitioners claim that IEPA’s NO_x BACT analysis is flawed because it failed to consider two pieces of information available before April 28, 2005, the re-issuance date for the final Permit.¹⁰⁸ First, Petitioners claim that IEPA failed to consider a Sierra Club letter to IEPA dated April 13, 2004 [sic]¹⁰⁹ citing the preamble to EPA’s proposed NSPS rule. Based on that letter and preamble, Petitioners claim that “[t]he WA Parish coal plant in Texas has demonstrated control of approximately 0.04 lb NO_x/MMBtu heat input.” Petition at 102. Contrary to Petitioners’ claim, the WA Parish facility does not have a limit of 0.04 lb/mmBtu, and EPA recognizes that such a limit is not justifiable.¹¹⁰

The Record reflects that IEPA investigated the WA Parish plant. Mr. Shashi Shah of IEPA contacted his counterpart, Mr. Erik Hendrickson of the TCEQ, by telephone and email on

¹⁰⁸ As a preliminary matter, Petitioners’ suggestion that IEPA is obliged to consider information submitted after the close of the public comment period is incorrect as a matter of law. In clear terms, the Board has repeatedly stated that “[p]ermitting authorities are under no obligation to consider comments received after the close of the public comment period.” *Steel Dynamics*, 9 E.A.D. at 194 n.32; see also *In re Ogden Martin Systems of Onondaga, Inc.*, 4 E.A.D. 405, 408 (EAB 1992) (“[C]losing the record after the public comment period brings order to the decisionmaking process, enabling permit issuers such as the state to manage their dockets efficiently and brings finality to permit proceedings.”) (internal citations omitted). Nevertheless, as discussed below, IEPA considered the information Petitioners claim should have been reviewed in establishing the NO_x BACT limit. Therefore, Petitioners are unable to demonstrate IEPA committed clear error in setting the NO_x limit and the Petition should be denied.

¹⁰⁹ The letter is actually dated April 13, 2005, well after the close of the public comment period. The letter followed up on a meeting Petitioners had with IEPA after the remand of the January Permit.

¹¹⁰ While Petitioners cite certain pages of the proposed NSPS rule published in the February 28, 2005 Federal Register for the proposition that “a NO_x limit of 0.04 lb/MMBtu was being achieved at a power plant in Texas,” (Petition at 102), the Federal Register actually states, “[w]hile the WA Parish coal facility in Texas has demonstrated control of approximately 0.04 lb NO_x/MMBtu heat input, we are proposing a level of 0.11 lb/MMBtu heat input as the basis for the proposed standard.” 70 Fed. Reg. 9706, 9710-11 (Feb. 28, 2005).

November 24, 2004. See Hendrickson Email (INTV Ex. 24). Mr. Hendrickson responded to Mr. Shah's inquiry with copies of the WA Parish permit as well as draft permits for two other proposed plants in Texas. Mr. Hendrickson first explained that for both of those projects, the applicant had proposed 30-day rolling average limits for NO_x of approximately 0.07 lbs/mmBtu and that TCEQ had accepted one of those proposals already. Mr. Hendrickson then explained TCEQ's observations of actual performance at the WA Parish plant:

As we discussed, we are aware of the NO_x emissions at W.A. Parish. We are aware that they are capable of actually achieving emission rates in the 0.03 #/MMBtu range; however, we are reluctant at this time to define BACT at this level for several reasons. We visited Parish about four weeks ago while one of the units was down for maintenance and we observed operational factors related to flow dynamics, ash plugging and accumulation on the catalyst, catalyst break through, and catalyst performance over time that warranted our reluctant (sic) to embrace a NO_x BACT level at 0.03 #/MMBtu. Although we are very optimistic about the performance of the SCRs at Parish and although we believe that it might be possible to consistently achieve emission levels in the 0.03 range in the future, we also acknowledge that there are too many legitimate operational uncertainties to reasonably justify a firm 0.03 permit limitation at the present time.

When we spoke on the phone, we discussed the history and basis for the NO_x emission levels for the coal-fired units at Parish. I reiterate that the NO_x controls that were added to the coal-fired units at Parish were not the result of a BACT review, but were instead from SIP rules that compelled corrective action to bring a serious ozone non-attainment area into compliance with the NAAQS. The distinction is important as it relates to subsequent BACT determinations, because a BACT permit limit is a, not to exceed level, whereas the SIP Emission Standards for Attainment Demonstration (ESADs) are not firm limits. The ESADs define allowance allocations for a cap and trade system. Compliance with the cap is required, but compliance with an individual ESADs is not required. A firm permit limit of 0.03 would actually require a unit be designed to achieve a level below the 0.03 level with a margin of error. Once you require someone to design below the lowest actual demonstrated level (the jury is still out on long-term actual demonstration), you are dipping into the technical feasibility realm of a BACT review.

... I wanted to convey one more important point. One must be careful to make like comparisons when doing BACT reviews for coal-fired units. Coal characteristics will affect the BACT levels for many of the contaminants. The coal-fired units at Parish burn a low sulfur PRB subbituminous coal. Comparison of performance levels from Parish to a unit that will burn high sulfur bituminous coal would not be a like comparison and would not be appropriate.

Id.

In the Responsiveness Summary, IEPA explained this follow up with Texas regulators in response to comments about the WA Parish plant:

For new coal-fired utility boilers, Texas is considering applications in which the proposed BACT limits for NO_x are about 0.07 lb/mmBtu, 30-day average. While the initial performance of existing boilers equipped with SCRs is better than this, Texas is concerned about factors that affect the performance of the SCRs over their operating life. Identified factors include flow dynamics, ash plugging, ash accumulation on catalyst, and catalyst deterioration.

RS No. 134 at 61-62 (INTV Ex. 4).

Thus, IEPA carefully considered and investigated claims about the NO_x emissions from WA Parish. Rather than accepting those claims, IEPA contacted the Texas regulators with personal knowledge of the situation and concluded that the reports of ultra-low NO_x emissions were not sufficient to base a BACT determination for Prairie State. IEPA was reasonable in drawing that conclusion and Petitioners have done nothing to suggest clear error.

Second, Petitioners point once again to information regarding the performance of coal-fired plants retrofitted with SCR technology as consistently achieving 30-day average NO_x emission rates as low as 0.03 lb/mmBtu. Petitioners cite a document of unknown origin purporting to show emissions data from units retrofitted with SCR to meet the NO_x SIP Call during the ozone season (May to September) each year. Petition at 102 (citing Pet. Ex. 49). The data purportedly represents emissions from July to September 2004.

IEPA responded persuasively to data on retrofit SCR performance:

This data provides substantial support for a limit lower than 0.08 lb NO_x/mmBtu, and was relied upon by the Illinois EPA in setting a BACT limit of 0.07 lb NO_x/mmBtu for the coal-fired boilers at the proposed plant. On the other hand, this data does not demonstrate that lower emission rates can consistently be achieved by the SCR systems on these units or by the SCR systems on new units. This is because retrofit installations may be more costly, but are not necessarily less effective in controlling emissions. In addition, given the nature of the NO_x SIP call, which entails trading of NO_x allowances, sources were encouraged to select and install SCRs to maximize reductions of NO_x emissions, thereby avoiding the need to add such systems at other units. As this data reflects the condition of the SCR systems when relatively new, it does not necessarily reflect the long-term performance of the systems. In addition, while allowance trading was not in effect in 2003, other factors may have encouraged rigorous operation in 2003, e.g., provisions to obtain allowances for early reduction in emissions. *This is confirmed, as a review of 2004 data did not show significantly different results.*

...

In summary, the emission data identified in the comment does provide strong support for a NO_x limit of 0.07 lb/mmBtu. In particular, as compared to a NO_x limit of 0.07 lb/mm Btu, only one of the 12 units would have exceeded this limit at only 0.071. Three units closely approached 0.07 lb/mmBtu, with NO_x emissions of 0.069 or 98.5 percent of the limit. Four units operated with a maximum rate between 0.064 and 0.067 lb/mmBtu, or between 91 and 96 percent of the limit. The final four units had maximum rates of no more than 0.061 lb/mmBtu, or 87 percent of the limit.

RS No. 137 at 64 (INTV Ex. 4) (emphasis added).¹¹¹

Thus, IEPA considered data from retrofit SCR units, including the 2004 data Petitioners proffer in their Exhibit 49, and identified a reasonable basis for determining that it supported a

¹¹¹ IEPA also noted that comments suggested lower emission rates had been achieved in practice, but that the data did not indicate such limits could be met for the life of the boiler even with proper operation, maintenance, and repair of the control system. RS No. 132 at 60 (INTV Ex. 4).

limit of 0.07 lbs NO_x /mmBtu, but no lower, based on the variability of the short term results.

Petitioners offer nothing to counter this determination, much less show that it is clear error.

C. The Haber Report Was Considered And Appropriately Rejected.

Petitioners argue that IEPA failed to offer a “reasoned explanation why it rejected USEPA’s Haber Report.” Petition at 103. In fact, IEPA provided compelling reasons for its rejection of Haber’s “advocacy document.” The Haber Report was authored for litigation purposes: it was not a conventional BACT analysis. Moreover, IEPA reasonably concluded that the Haber Report is extreme and “unrealistic” in its suggestion of BACT limits, a conclusion borne out by the terms of EPA’s settlement of the Baldwin litigation. In the settlement, the NO_x limit was set at 0.10/mmBtu, almost seven times higher than Mr. Haber opined. *See* RS No. 133 at 61 (INTV Ex. 4). Finally, IEPA provided ample support for establishing Prairie State’s NO_x BACT limit at 0.07 lb/mmBtu, irrespective of the Haber Report.

1. The Haber Report is an “advocacy document,” not a BACT analysis.

IEPA considered and thoroughly responded to public comments about the Haber Report.

IEPA explained why the report is not a reliable basis for a BACT determination:

Notwithstanding the aforementioned, the Haber document did not provide the type of information that could reasonably be relied upon in the BACT determination for the proposed plant. This conclusion is warranted given the nature and origin of the document, which was developed in the adversarial context of a lawsuit initiated by the federal government. The Haber document can fairly be regarded as a product of litigation, where each party postures for its best legal argument before any settlement negotiations. Such a process should be contrasted with the desired objectivity of a top-down methodology for determining BACT. Because this document was prepared for purposes of litigation rather than a conventional evaluation of BACT, it was not appropriate for the Illinois EPA to have employed the document’s conclusions or underlying assumptions in the BACT determination for the proposed project. The Haber document, as it was prepared

by an expert for one side in the case, must be treated as an advocacy document. Notably, the outcome of the Dynegy lawsuit which addressed compliance with the PSD program as reflected in the proposed Settlement Agreement may be considered more meaningful than the Haber document or other documents provided by either the US EPA or Dynegy in this case.

Id. at 50-51, No. 105.

Notably, the Petition does not respond to IEPA's characterization of the Haber report as "the product of litigation" where each party "postures" for settlement. *See Knauf II*, 9 E.A.D. at 5 ("Petitions for review may not simply repeat objections made during the comment period; instead they must demonstrate why the permitting authority's response to those objections warrants review."), *quoted in* EAB Practice Manual at 33 (EPA June 2004). Nor have Petitioners addressed IEPA's determination that the Proposed Settlement Agreement for the Baldwin litigation is more meaningful and objective than Haber's Report. *See* RS No. 133 at 61 (INTV Ex. 4) (noting that the Settlement Agreement sets NO_x limit for Baldwin at 0.10 lb/mmBtu). These are rational bases for IEPA to discount the value of the Haber Report, and Petitioners have not addressed them.

2. A limit of 0.015 lb/mmBtu is extreme and unrealistic.

As noted by IEPA, Mr. Haber's suggested NO_x limit is unrealistic:

The limit for NO_x recommended by Mr. Haber is significantly below the limit for NO_x being required of other new boilers, to a degree that is unrealistic. It reflects ideal performance of the low-NO_x combustion controls and SCR systems on the boilers, without any initial safety factor. As noted by the comment itself, Mr. Haber indicates that the BACT limit that is actually achievable for NO_x may actually be two and a half times a value that is initially being recommended.

Id. This response is reasonable and Petitioners have failed to explain why it constitutes clear error.

Although Petitioners deny that Mr. Haber's proposed limit reflects "ideal performance," they do not rebut IEPA's observation that Haber's recommended limit "is significantly below the limit for NO_x being required of other boilers, to a degree that is unrealistic." *Id.*; *see also id.* at 77, No. 166 (Mr. Haber's recommendation for PM limits are likewise "unrealistic"). If, in fact, Mr. Haber's litigation opinions reflected achievable emissions rates, one would expect Petitioners to cite plants actually achieving those rates, vendors guaranteeing those rates, and permitting authorities establishing those rates in actual practice. One would also expect EPA to insist on those rates in permitting actions around the country. Petitioners offer no such citations because they do not exist.

3. EPA provided substantial evidence in support of its determination that 0.07 lb/mmBtu is BACT, not 0.015 lb/mmBtu.

The Haber Report does not warrant granting review for an additional reason: IEPA provided substantial evidence in support of the NO_x limit in the Permit. *See, e.g., id.* at 57-72, Nos. 125-156; Project Summary at 5-7 (INTV Ex. 2); Calculation Sheet at 7-8 and Attachments 2.1 and 2.4 (INTV Ex. 3). Even if the Haber Report somehow reflected BACT for the Baldwin Plant, which it does not, there is no requirement that IEPA's case-by-case BACT determination for Prairie State establish the same BACT limit. *See, e.g., Cardinal*, slip op. at 23 (no requirement that permitting authority establish limit at lowest emissions rate that has been achieved elsewhere). IEPA fully justified the NO_x limit in the Permit, and the Haber Report does not render IEPA's determination clearly erroneous.

In sum, Petitioners have not shown that IEPA committed clear error in its determination that 0.07 lb NO_x/mmBtu is BACT for Prairie State. Therefore, Petitioners' arguments regarding the NO_x BACT limit should be rejected and the NO_x limit in the Prairie State Permit upheld.

XX. IEPA APPROPRIATELY ADDRESSED BACT DURING STARTUP AND SHUTDOWN.

Petitioners argue that IEPA failed to meet the minimum requirements of the CAA with respect to emissions during startup and shutdown. That argument is based on speculation and a total disregard of the actual Permit conditions applicable to startup and shutdown. As explained below, IEPA established BACT limits for all periods of operation and did *not* exempt Prairie State “from any concentration limits during startup and shutdown.” See *Indeck-Niles*, slip op. at 13 n.9. IEPA’s treatment of emissions during startup and shutdown is one of the most comprehensive ever included in a PSD permit. Consistent with past Board decisions, review should be denied.

A. IEPA Developed Secondary Startup and Shutdown BACT Limits for PM, VOM, Sulfuric Acid Mist, and Fluoride.

Petitioners argue that IEPA did not provide BACT limits that are applicable during startup and shutdown for PM, volatile organic matter (“VOM”), sulfuric acid mist, and fluorides. Petitioners rely on the Board’s decisions in *Tallmadge* and *RockGen*. In these cases, the Board remanded the permits for failure to adequately address emissions during startup and shutdown. As the Board explained in *Indeck-Niles*, however, *Tallmadge* and *RockGen* do not establish a bright line rule applicable in every case that contains a startup and shutdown emission minimization plan, particularly where emissions during startup and shutdown are not completely exempted from BACT, as is the case here. *Indeck-Niles*, slip op. at 15. IEPA included provisions in the Permit to address startup and shutdown that are consistent with those upheld in *Indeck-Niles*, and review should be denied in this case as well.

As Michigan did in the *Indeck-Niles* permit, IEPA included several requirements in the Prairie State Permit to address PM, VOM, sulfuric acid mist, and fluoride emissions during startup and shutdown. IEPA imposed specific emissions limits during startup and shutdown. In

Condition 2.1.2.e, IEPA identifies the lb/hour limits in Permit Condition 2.1.7.a Attachment 1: Table 1, which are averaged over a 3-hour period, as secondary BACT for these four pollutants. For these pollutants, the lb/hour limits are derived directly from the primary BACT lb/mmBtu limits and the rated capacity of the boiler (7443 mmBtu/hr). It was appropriate to use the rated capacity of the boiler instead of the capacity during startup and shutdown as these limits apply at all times, not just during startup and shutdown periods.¹¹² In addition to the secondary limits, Condition 2.1.2.e requires the use of good air pollution control practices to minimize startup and shutdown emissions and the development of procedures that include startup and shutdown plans. The minimum requirements of the procedures/plans are outlined in Conditions 2.1.6 and 1.4. Finally, the annual limits provided in Condition 2.1.7 Attachment 1: Table 1 apply at all times, including startup and shutdown. These limits are also derived from the primary BACT limits and the rated capacity of the boilers.¹¹³

Petitioners attempt to refute these provisions by incorrectly asserting that IEPA granted a blanket exemption from the BACT limits during startup and shutdown. As described above, nothing could be further from the truth. IEPA developed secondary BACT limits and discussed its rationale for those secondary limits in the Responsiveness Summary and the Calculation Sheet that accompanied the Permit. RS No. 184 at 83-85 (INTV Ex. 4); Calculation Sheet at 5, 14 (INTV Ex. 3). As the Board found in *Indeck-Niles*, such limits satisfy the CAA requirements.

Petitioners next assert that IEPA replaced the BACT limits with a general duty requirement in Condition 2.1.2.e. Petition at 106. To the contrary, Permit Condition 2.1.2.e

¹¹² The mmBtu/hour rate will also fluctuate during startup and shutdown, which is what led IEPA to express the limits in terms of lb/hour. See RS No. 184 at 83-85 (INTV Ex. 4).

¹¹³ While IEPA did not explicitly identify these as secondary BACT limits as Michigan did for *Indeck-Niles*, they are derived from the primary BACT limits and are implicitly BACT.

supplements the secondary limits. It is not a substitute, as IEPA explained in the Responsiveness Summary. RS No. 184 at 83-85 (INTV Ex. 4). As the Board has concluded, there is nothing inherently wrong with a permit condition that requires a plan or procedures to be developed after the issuance of the permit. *Indeck-Niles*, slip op. at 17-18 (upholding a similar provision finding that the description of what was to be included in the plan was sufficient to provide the public adequate opportunity to comment). As in *Indeck-Niles*, IEPA included information in the Permit that describes what the plan and procedures are to include. See Permit Conditions 2.1.6 and 1.4 (e.g., address readily foreseeable scenarios, maintain records of compliance with the plans) (INTV Ex. 1). Petitioners have not shown how the Permit differs from what was accepted by the Board in *Indeck-Niles*. In fact, they have not acknowledged that decision at all.

Petitioners also attempt to discredit the secondary BACT limits by arguing that they are not really BACT limits because IEPA failed to specifically state so in Table 1, even though they acknowledge that IEPA so stated in a note to Condition 2.1.2.e. Petition at 107-08; see Calculation Sheet at 5, 14 (INTV Ex. 3) (indicating the limits are secondary BACT limits). IEPA's failure to repeat the note from Condition 2.1.2.e in Condition 2.1.7 or Table 1 in no way invalidates that the limits are secondary BACT limits or makes the PSD requirements any less applicable. Condition 2.1.7 and Table 1 likewise do not specify that the lb/mmBtu limits are BACT limits. Surely Petitioners would not argue that such an omission renders those primary limits something other than BACT limits and not enforceable under the PSD program, as they contend for the secondary BACT limits.

Petitioners next assert that IEPA erroneously waived testing for the secondary BACT limits without providing a reasoned analysis, and that the limits are not practically enforceable. Petition at 108. Contrary to Petitioners' assertion, testing is not the only mechanism for

demonstrating compliance. IEPA recognized the limitations (virtual impossibility) of performing stack tests during periods of startup and shutdown. Instead of requiring a work practice as it could have done consistent with the BACT definition, IEPA elected to provide an alternate means of demonstrating compliance during those periods — engineering calculations and analyses.¹¹⁴ Such calculations can be performed at any time to determine compliance; thus, the limits are continuously enforceable.

Finally, Petitioners erroneously assert that the NAAQS modeling did not include startup and shutdown emissions. Contrary to Petitioners' assertion, the NAAQS modeling, as well as increment modeling, did include emission rates reflective of startup and shutdown. Of the four pollutants identified by Petitioners, only PM has a NAAQS.¹¹⁵ As indicated in Modeling Addendum 2 (INTV Ex. 76) (as well as all the PM modeling submitted to IEPA), PSGC modeled PM at a rate of 46.891 g/s (372.15 lb/hour, 0.05 lb/mmBtu), which is significantly higher than the secondary BACT limit of 261 lb/hour (32.824 g/s).¹¹⁶ Petitioners' allegation is another example of their failure to review the available information before making unfounded allegations.

¹¹⁴ Stack tests require planning before undertaking. They are not something that a permittee can perform at a moment's notice, which would be necessary if stack tests were required for demonstrating compliance during startup and shutdown. With the exception of PM, there are no CEMS for these pollutants, which is why IEPA elected an alternative means of demonstrating compliance. As IEPA explained, the PM CEMS are not sufficiently reliable to allow PM to be treated differently from the other three pollutants at this time.

¹¹⁵ PSGC also modeled emission rates that include startup and shutdown emissions for SO₂, NO_x, CO, and lead. *See, e.g.*, Response to Dynegy Comments, Attachment 2 (June 14, 2004).

¹¹⁶ As previously discussed, PSGC modeled PM at an emission rate of 0.05 lb/mmBtu (46.891 g/s) to account for the uncertainty of condensable emissions. To convert from lb/mmBtu to g/s using PM as an example: 0.05 lb/mmBtu x 453.6 g/lb x 7443 mmBtu/hr x 2.778x10⁻⁴ hr/s = 46.891 g/s.

In sum, IEPA's startup and shutdown emissions limits for PM, VOM, sulfuric acid mist, and fluoride are appropriate alternate BACT limits. IEPA provided a reasoned basis for its inclusion of these provisions in the Permit, which are consistent with those upheld by the Board in *Indeck-Niles*. Review of the Permit based on BACT for startup and shutdown emissions of these four pollutants should be denied.

B. The Alternative Compliance Procedures for SO₂ and NO_x are Appropriate.

With respect to SO₂ and NO_x, Petitioners argue that the alternative compliance procedures during startup or shutdown redefine BACT for those pollutants. To support their argument, Petitioners cite only page B.56 of the Draft NSR Manual. Petition at 109. They do not address IEPA's basis for the alternate procedure, which is discussed in the Responsiveness Summary and the Calculation Sheet. Petitioners have not demonstrated clear error on the part of IEPA, thus review should be denied.

The BACT limits for SO₂ (0.182 lb SO₂/mmBtu on a 30-day rolling average basis and 98 percent annual removal efficiency) and NO_x (0.07 lb/mmBtu) apply during startup and shutdown.¹¹⁷ Permit Condition 2.1.2.b.ii and iii (INTV Ex. 5). IEPA merely included an alternative means of determining compliance consistent with the methodology of the Acid Rain Program and the NO_x Trading Program. *Id.*; RS No. 184 at 83-85 (INTV Ex. 4); Calculation Sheet at 14 (INTV Ex. 3). IEPA did precisely what was called for in the Draft NSR Manual by including compliance verification methods and record keeping requirements in the Permit. See Draft NSR Manual at B.56 (INTV Ex. 22).

¹¹⁷ Additionally for SO₂, the short-term limit expressed in lb/hour also applies during startup and shutdown. Permit Condition 2.1.7, Attachment 1: Table 1 (INTV Ex. 1). The 24-hour NO_x limit, however, does not apply during startup and shutdown, as the SCR cannot be operated below certain temperatures. *Id.*; RS No. 184 at 83-85 (INTV Ex. 4).

The 30-day rolling average BACT limits in the draft permit did not include startup and shutdown emissions. Thus, it was appropriate to specify the NSPS compliance methodology in the draft as the NSPS also do not apply during startup and shutdown. Draft Permit Condition 2.1.2.b (INTV Ex. 1). When IEPA determined that the BACT limits should apply at all times, the Agency likewise decided that an alternative compliance method was needed. RS No. 184 at 83-85 (INTV Ex. 4); Permit Condition 2.1.2.b.ii and iii (INTV Ex. 1).

Contrary to Petitioners' assertion, the alternate compliance procedures for the 30-day rolling average SO₂ and NO_x limits do not redefine BACT for periods containing a startup or shutdown event. The limits are still expressed in lb/mmBtu. Compliance is determined by dividing the total mass of SO₂ and NO_x emitted, as determined by the CEMs (Calculation Sheet at 14 (INTV Ex. 3)), by the total heat rate for the period (*i.e.*, if for a 30-day period 1,000 lbs of SO₂ were emitted and the total heat rate for that period was 5,500 mmBtu, the emission rate would be 0.182 lb/mmBtu on a 30-day basis, in compliance with the BACT limit). RS No. 184 at 83-85 (INTV Ex. 4); Permit Condition 2.1.2.b.ii and iii (INTV Ex. 1). IEPA's allowance of an alternate method to demonstrate compliance in no way affects the validity of the BACT determination.

Petitioners have not shown clear error on IEPA's part. Therefore, review should be denied.

C. The CO Startup and Shutdown Limit is Practically Enforceable.

Petitioners' final argument with respect to startup and shutdown is that the CO limit is not practically enforceable because it is ambiguous. This argument appears to be based on (1) Petitioners' erroneous conclusion that the CO BACT limits applies on a 24-hour rolling basis and (2) the failure to include the period when startup ends and shutdown begins. Regardless of the

basis for Petitioners argument, the CO BACT limit that applies during startup and shutdown is practically enforceable and review should be denied.

For CO, IEPA elected to express the BACT limit as a lb/hour 24-hour block average, not a rolling average, for startup and shutdown.¹¹⁸ Permit Condition 2.1.2.b.iv.B (INTV Ex. 1). The 893-lb/hour limit is the product of the BACT limit in lb/mmBtu and the rated capacity of the boiler, just like for PM, VOM, sulfuric acid mist, and fluorides. For CO, IEPA also described when a startup period begins (*i.e.*, initial firing of fuel) and when shutdown ends (*i.e.*, cessation of fuel flow to the boilers). *Id.* Compliance with the CO limits is determined using the CO CEMS. *Id.* at Condition 2.1.7.a.iii.A. As with the other pollutants, PSGC is required to develop procedures and plans addressing startup and shutdown per Conditions 2.1.6 and 1.4.

Because the limits are block averages, defining the beginning of startup and the end of shutdown is all that is necessary to ensure the limit is enforceable. For startup, the 24-hour block period begins upon initial firing of fuel. *Id.* at Condition 2.1.2.b.iv.B. As discussed in the Application, cold startup is expected to take approximately 8 hours. Permit Application (October 2002) at C.45-45 (INTV Ex. 6) (a cold startup should reflect the maximum amount of time). The 24-hour period including the startup would end 24 hours after the initial firing of fuel. *See* Permit Condition 2.1.7.a.iii.A (INTV Ex. 1). All emissions during that 24 hours would be included in determining compliance. Petitioners assume that the 24-hour block would not include emissions after startup is complete, but this assumption defies logic and is nowhere supported by the Permit. For shutdown, the 24-hour period would end with cessation of fuel flow. *Id.* at Conditions 2.1.2.b.iv.B and 2.1.7.a.ii.A.

¹¹⁸ Both BACT limits (one expressed in lb/mmBtu and the other in lb/hour) are 24-hour block averages as opposed to the rolling average alleged by Petitioners. Permit Condition 2.1.2.b.iv (INTV Ex. 1).

As illustrated, the compliance mechanism for CO during startup and shutdown is not ambiguous. The limit is clearly enforceable with the aid of the CEMS and the definitions included in the Permit. Petitioners have not shown that IEPA committed clear error with respect to the CO BACT limits or that the limits are practically unenforceable. Thus, review should be denied.

XXI. IEPA PROPERLY CONSIDERED “ACHIEVABLE” LIMITS.

Petitioners argue that IEPA misinterpreted BACT because IEPA refused to accept evidence of particular facilities' short-term performance as establishing long-term BACT limits. Petition at 111-12. Petitioners accuse IEPA of confusing “achieved” emission rates with “achievable” rates.¹¹⁹ Petitioners, though, misunderstand both IEPA's responses and the concept of “achievability” under BACT.

For each BACT limit, IEPA expressly determined what would be “achievable” for Prairie State. *See, e.g.*, Project Summary at 4-14 (INTV Ex. 2). In determining what a source can achieve, a powerful source of information can be what other sources have achieved in practice (*i.e.*, what has been demonstrated). *See* Draft NSR Manual at B.24 (INTV Ex. 22). Indeed, Petitioners themselves argue throughout their Petition that past performance from a particular facility should guide the BACT analysis. Petitioners fail to recognize, however, that a BACT limit must be “achievable” not only on a plant's best day or on an average day, but it must be “achievable” continuously over the long term. *See* RS No. 230 at 103-04 (INTV Ex. 4) (noting the need to account for normal variation in performance, and discussing the appropriate use of safety factors when considering performance data.). A facility that has “achieved” a low emission rate on a single test or during a single ozone season will not necessarily be able to

¹¹⁹ Although presented as an independent claim for relief, this issue does not challenge any particular condition in the Permit. It is merely a general criticism of IEPA's overall approach to BACT. Since the claim does not challenge any specific condition of the Permit as clearly erroneous, it is not a proper claim. *See LCP Chems.*, 4 E.A.D. at 664 (“To meet this burden, § 124.19 requires a petitioner to include in its petition for review ‘a statement of the reasons supporting review, including ... that the condition in question is based on’ either a clearly erroneous finding of fact or a conclusion of law or on a policy or exercise of discretion warranting review. 40 C.F.R. § 124.19(a)... We have interpreted this provision as requiring two things in a petition for review: a clear identification of the conditions in the permit at issue, and an argument that the condition warrants review.”) (emphasis omitted); *accord BP Cherry Point*, slip op. at 8.

achieve that rate on *every* test or during *every* ozone season or for the entire year. *See id.* at 53, No. 111.

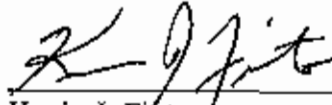
Any single exceedance of the BACT limit can subject a permittee to enforcement. *See, e.g., id.* at 108-09, No. 241 (“This is significant as limits set as BACT should not be set at levels that are not achievable in practice, such that normal variability in the performance of a source threatens or results in noncompliance even when the source is properly operated and maintained.”). Thus, short-term performance data alone cannot justify a BACT limit. Consequently, IEPA was correct to insist that, if Petitioners propose a lower limit based on performance data, the performance data must be sufficient to predict long-term continuous achievability. *See, e.g., id.* at 53, No. 111; 54, No. 114; 62-63, No. 136; 63-64, No. 137; 103-04, No. 230; 108-09, No. 241.

Contrary to Petitioners’ suggestion, BACT does not require IEPA to speculate about the “*potential* to achieve in the future.” *See* Petition at 111 (emphasis added). Rather, consistent with the principles above, IEPA may set the limit that “allows permittees to achieve compliance on a continuous basis” even if the limit is higher than actual emissions reported by other facilities at certain times. *Cardinal*, slip op. at 22-23 (citations omitted); *see also* RS No. 100 at 46-47 (“In this sense, while 98.4 percent was achieved at times, the comment does not show that 98.4 percent is achievable on a continuing basis.”). In each instance where Petitioners cited performance data from a particular facility, IEPA correctly evaluated the data to determine whether it suggested Prairie State would achieve the proposed emission rate in the future. In each instance, IEPA concluded Prairie State could not because the data were either unreliable or too brief in duration. Petitioners simply disagree with IEPA’s conclusions and seek to substitute their judgment for IEPA’s professional judgment. This issue does not warrant review.

CONCLUSION

For the foregoing reasons, PSGC respectfully requests that the Board deny review of the Petition.

Respectfully submitted,



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Dated this 29th day of July, 2005.

CERTIFICATE OF SERVICE

I hereby certify that on the 29th day of July, 2005, copies of the foregoing Intervenor Prairie State Generating Company, LLC's Brief in Response to Petition were served by first class mail, postage prepaid to:

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