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

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

PETITION FOR REVIEW

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INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), American Bottom Conservancy, American Lung Association of Metropolitan Chicago, Clean Air Task Force, Health and Environmental Justice-St. Louis, Lake County Conservation Alliance, Sierra Club and Valley Watch (Petitioners), petition for review of the conditions of the PSD Permit No. 189808AAB (Application No. 01100065) ("the Revised Permit"), which was issued to Prairie State Generating Company, a subsidiary of Peabody Energy ("Peabody"), on April 28, 2005 (attached as Pet. Ex. 1). The State of Illinois is authorized to administer the Prevention of Significant Deterioration permit program pursuant to a delegation of authority by the United States Environmental Protection Agency (hereinafter "USEPA"). The permit at issue in this proceeding authorizes Peabody to construct a massive 1500 megawatt coal-fired power plant and associated emission sources in Washington County, Illinois. Petitioners contend that the Illinois Environmental Protection Agency (hereinafter "IEPA") did not comply with various procedural protections and that certain permit conditions are based on clearly erroneous findings of fact and conclusions of law.

FACTUAL AND STATUTORY BACKGROUND

Peabody is the fourth coal-fired power plant approved in Illinois in the past three years as part of the Illinois Coal Revival Program, a state-sponsored program providing state subsidies to coal-fired power plant projects, such as Peabody's proposal. The State of Illinois is leading the pack that is pushing a massive new "Coal Rush" sweeping across the United States. According to the U.S. Department of Energy, over one hundred new coal-fired power plants are in various stages of planning and permitting.[1] More coal

[1] U.S. Dept. of Energy, Tracking New Coal-Fired Power Plants: Coal's Resurgence In Electricity Generation (Dec. 22, 2004) at http://www.netl.doe.gov/coal/refshelf/New%20Coal%20Plants%20(12-22-04).pdf (last visited 2.21.2005).

plants are planned in Illinois than in any other state in the Union. The vast majority of these projects propose the same outdated combustion technology proposed by Peabody: pulverized coal. Pulverized coal not only emits far more criteria and hazardous air pollutants than more advanced coal combustion technologies, such as integrated gasification combined cycle (IGCC), it lacks any means to capture and sequester carbon dioxide, the principal culprit that causes global warming.

Following Illinois' deregulation of its electric markets in 1997 the primary remaining requirement for any person to construct a coal-fired power plant is to obtain an air permit and a water intake/discharge permit. There has been no assessment of the need for each of Illinois' thirteen proposed coal-fired power plants. Illinois has never conducted an assessment of the additional soot, smog, mercury and global warming emissions that could result from its Coal Revival Program. At the same time California, Washington, New York, Maine and other states move forward to reduce carbon dioxide emissions, Illinois is approving new pulverized coal plants without considering energy efficiency and clean energy sources as alternatives.

Peabody's proposal would dump approximately 25,000 tons of criteria pollutants and millions of tons of carbon dioxide annually from a single 700-foot tall smokestack located 1.8 miles from the edge of the Greater St. Louis 8-hour ozone and fine particulate matter nonattainment area. This plant will exacerbate existing pollution woes. Many of this permit's failings are common among other coal plant proposals in the United States. Board review of this permit could provide much-needed national guidance in these early

days of the Coal Rush, keep attention focused on key clean air protections, and ensure we are reducing, not increasing, the number of air pollution alerts in the Great Lakes region.[2]

STATEMENT OF FACTS

On October 19, 2001 Peabody applied for a PSD permit to build a 1500 MW mine-mouth coal-fired power plant in Washington County, Illinois. See Revised Permit, Pet. Ex. 34 at 1. IEPA issued a draft PSD permit on or about February 4, 2004 (attached as Pet. Ex. 2). Petitioners' representatives testified on the draft permit at the Marissa High School hearing. See Transcript of Hearing In Re: Proposed Issuance of a Construction Permit/PSD Approval to Prairie State Generating Company LLC (Mar. 22, 2004) (attached as Pet. Ex. 3) at 2. Petitioners also submitted extensive and detailed comments on the draft permit. See Letter from Robert Ukeiley on behalf of Sierra Club, Clean Air Task Force, and Lake County Conservation Alliance to Charles Matoesian, IEPA, and USEPA Administrator Michael Leavitt (June 17, 2004) (hereinafter "Ukeiley Comments") (attached as Pet. Ex. 4); Letter from Dr. Phyllis Fox on behalf of Sierra Club to Charles Matoesian, (June 21, 2004) (hereinafter "Dr. Fox Comments") (attached as Pet. Ex. 5); Letter from American Lung Association of Metropolitan Chicago, American Bottom Conservancy, Lake County Conservation Alliance, Prairie Rivers Network and Sierra Club to IEPA Hearing Examiner and USEPA Administrator Michael Leavitt (Aug. 23, 2004) (hereinafter "ALA Comments") (attached as Pet. Ex. 6); Letter from John Thompson, Clean Air Task Force to Charles Matoesian, IEPA (Aug. 26, 2004) (hereinafter "CATF Comments") (attached as Pet. Ex. 7); Letter from John Blair, Valley Watch, to Hearing Officer, IEPA (hereinafter "VW Comments") (attached as Pet. Ex. 8);

[2] "During the seven-day period from January 31 to February 6, 2005, many regions in the eastern-half of the U.S. [including St. Louis] and southeastern Canada experienced a particle pollution episode, affecting millions of people." www.epa.gov/airnow/particle-event.html (last visited 2.21.2005).

Letter from Dr. Phyllis Fox to Shashi Shah, IEPA (August 26, 2004), submitting supplemental information on SO2 emissions, (hereinafter "Dr. Fox Comments II") (attached as Pet. Ex. 9); and Letter from Dr. Phyllis Fox on CO2 (July 26, 2004) (attached as Pet. Ex. 9A).

On January 21, 2005 IEPA formally notified the public it issued Peabody a final PSD permit, the final permit and the responsiveness summary were available for public review, and the timeline for appealing the permit to the Board had commenced. See Letter from Bradley Frost, IEPA, to Bruce Nilles, Sierra Club (Jan. 21, 2005) (IEPA Frost Letter) (attached as Pet. Ex. 11 at 1). Petitioners subsequently appealed that permit to this Board and the permit was remanded. On April 28, 2005 IEPA issued a revised permit (Pet. Ex. 1) and a revised Responsiveness Summary for Public Questions and Comments on the Construction Permit Application from Prairie State Generating Company attached as Pet. Ex.12.[3] Petitioners now challenge this revised permit for many of the same reasons they challenged the first permit. In its rush to grant Peabody a PSD permit IEPA has cut corners, narrowly construed its authority to avoid considering alternatives, failed to update the BACT analysis despite receiving new information about lower emissions limits being achieved at other coal plants, and otherwise rushed its decision. That haste has produced a permit that falls far short of minimum legal requirements.

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioners satisfy the threshold requirements for filing a petition for review under Part 124:

[3] References to the revised responsiveness summary include a reference to a specific question and answer to facilitate locating the cited language. E.g. Pet. Ex. 12, #103 refers to the revised responsiveness summary question/answer number 103.

1. Petitioners have standing to petition for review of the permit decision because they participated in the public comment period on the permit. 40 C.F.R. 124.19(a). See Pet. Exs 4-9. Petitioners' representatives also commented on the draft permit at the hearing held on March 22, 2004 at the Marissa High School in Marissa, Illinois. See Hearing Transcript, attached as Pet. Ex. 3.

2. The issues raised by Petitioners below were either raised with IEPA during the public comment period or are new issues, not previously subjected to public review. Consequently, the Board has jurisdiction to hear Petitioners' timely request for review of the following issues involving Peabody's PSD permit.

ARGUMENT

I. High-Level Illinois Officials Redact Staff's Expert Biological Opinion To Avoid an Endangered Species Issue

The area of the proposed Peabody plant is home to the Eastern Narrow Mouth Toad – a state endangered species. Peabody's proposal may impact this endangered species' habitat by using "approximately 1 million tons of limestone per year that will be sourced from the immediate area." Letter from Colin Kelly, Peabody, to Donald Sutton, IEPA (October 11, 2002), Pet. Ex. 35 at 4. Rather than the state establishing reasonable protections for the endangered toad, Petitioners have uncovered a troubling trail of emails strongly indicating that high-level state officials rewrote a draft biological opinion – over the objection of Illinois DNR's expert staff -- to remove any reference to the toad before releasing the final biological opinion to the public. Pet. Ex. 34.

This is a new issue not previously raised in public comments or described by IEPA in any of its public documents. This issue came to light when, following the Board's remand of the first Peabody permit, IEPA informed Petitioners that it had finally

prepared the administrative record for this proceeding and was making it available for public review. The boxes of records Petitioners reviewed contained the following September 28, 2004 email from Laurel Kroack, IEPA Air Division Director to Peabody's Dianna Tickner:

> We have a draft of the IDNR biological opinion which will show not likely to adversely impact, but they raise that you will obtain limestone locally which could affect habitat of the toad. Will you be getting limestone locally? If so, where will it be from? (e.g. will be along a river?) I'd like to try and get this statement out of the letter if possible ...

Pet. Ex 36 (emphasis added). The draft Illinois Department of Natural Resources (hereinafter "IDNR") biological opinion was not included in the administrative record or within the records made available to Petitioners by IEPA, IDNR or USEPA. On May 17, 2005, Petitioners submitted a Freedom of Information Act request to IEPA for a copy of the draft biological opinion cited in Ms. Kroack's email. On May 24, 2005 IEPA denied the request.[4] Petitioners submitted a FOIA request and conducted a document review at IDNR. There too, Petitioners found no evidence of the draft biological opinion.

This missing opinion would remain an unsolved mystery but for a November 22, 2004 email from Keith Shanks, IDNR, to his supervisor Todd Rettig, a manager in IDNR's Division of Resource Review and Consultation. This email offers chilling details about the missing biological opinion:

> I am forwarding a note from Mike Branham [IDNR staff] pertaining to the editing of our draft letter terminating consultation on the air quality permit for the Prairie State Generating Station.[5] But I feel compelled to express myself more strongly.
>
> The [state consultation] regulations at Part 1075 require us to evaluate the direct and indirect effects of a proposed action. Indirect effects include the interdependent and interrelated impacts of the proposed action. This

[4] The Sierra Club FOIA request and IEPA denial letter are attached as Pet. Ex. 37.
[5] Neither IEPA nor IDNR made available the Mike Branham email referenced in this document.

> evaluation is independent of any recommendations we may make to avoid or minimize, and independent of the scope of the authority vested in the consulting agency.
>
> First, the removal of our reference to the potential indirect effects on the eastern narrowmouth toad now poses a risk that opponents of the project may request that consultation be re-opened for consideration of the indirect impacts to this animal, because it now appears from the record that such impacts are not considered. This omission may jeopardize a multi-billion dollar project, not facilitate it.
>
> Second, we are not accustomed to have our professional opinions redacted by Executive Managers or the Governor's Office. This is a precedent with both legal and ethical ramifications. ... When others, presumably less experienced and/or qualified, change our conclusions, presumably for political reasons, let alone omit them altogether, they jeopardize the legal sufficiency of the final official position.
>
> On the other hand, less-than-full disclosure of the expected adverse impacts of the proposed action, even or, perhaps, especially, when the consequences are beyond the control of the consulting agency, is fundamentally dishonest.
>
> Third, when (not if) this omission comes to light, it will compromise the credibility of the Consultation Program. Our credibility is our most important asset. If our statements are not credible to the public and to other experts, they are of no value to any governmental body. Credibility rests on the belief that we tell it like it is, not the way we (or somebody else) would like it to be. ....

Pet. Ex. 38.

The facts described in these two emails warrant Board review. The state's decision to redact the final biological opinion to remove any reference to the endangered species and its refusal to release the draft biological opinion violate basic PSD public participation requirements. BACT requires the IEPA to "identify any significant or unusual environmental impacts associated with a control alternative that have the potential to affect the selection or elimination of a control alternative [because] [s]ome control technologies may have secondary (i.e. collateral) environmental impacts." NSR Manual at B.47. "Generally, these types of environmental concerns become important

when sensitive site-specific receptors exist ...." Id. One potential collateral impact of using locally-mined limestone in Peabody's SO2 controls is the destruction of the habitat for the endangered toad, a quintessential sensitive site-specific receptor. IEPA's withholding of information about a site-specific impact is clear error.

Additionally, it was clear error to withhold pertinent information from the public. One of the central purposes of the Clean Air Act is "to assure that any decision to permit increased air pollution in any [PSD] area . . . is only made after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process. 42 U.S.C. § 7470(5). There can be no careful evaluation and informed public participation in a PSD permitting proceeding if critical information is redacted from the public record.

The Board should review this issue because it is a significant policy issue that the public never had the opportunity to consider. Petitioners recognize this is an unusual situation. It is apparent that the state circumvented basic public participation requirements. That is clear error. If, in addition, the state does not provide a reasonable explanation that refutes the allegations in these emails, Petitioners respectfully urge the Board to request the Regional USEPA Administrator to revoke the delegation of the instant permit and for the region – not the state -- to make a final decision on the Peabody PSD permit consistent with the PSD regulations and 40 CFR Part 124. See e.g. In re West Suburban Recycling & Energy Center, L.P., 6 E.A.D. 692, 695 n.3 (EAB 1996) (The Board cites to a USEPA amicus brief suggesting that revoking the delegation agreement for individual PSD permits is an appropriate remedy when IEPA acts inconsistent with the delegation agreement.).

II. IEPA Committed Legal Error By Asserting That It Lacked Authority to Consider the Need for or Alternatives To a 1500 MW Coal-Fired Power Plant

Multiple individuals and organizations, including the Department of the Interior and Petitioners, urged IEPA to consider whether there was a need for Peabody's coal plant; to consider alternatives to coal such as natural gas, renewable energy sources and energy efficiency; to consider a smaller power plant with less overall emissions and fewer impacts on public health and the Mingo National Wildlife Refuge. IEPA responded that it lacks the authority to consider any of these issues, suggesting that its role is merely ministerial and that it must issue a permit whenever an applicant meets some checklist of predetermined requirements. IEPA's position ignores the fact that a PSD review includes a broad evaluation of the use of air resources. IEPA's misconception about its legal authority goes to the heart of the PSD permit program, and is clearly erroneous. This is also a significant policy matter that warrants the Board's review.

Curiously, IEPA does not dispute that alternatives sources of energy, such as energy efficiency measures and wind power, would offer significant air quality benefits for Illinois residents. See e.g. Response, Pet. Ex. 12, # 25 ("the Illinois EPA certainly recognizes the air quality benefits of wind power and solar energy and encourages companies to pursue such projects ...."); Response, Pet. Ex. 12, # 27 ("the Illinois EPA recognizes the benefits of energy efficiency measures in the residential, commercial and industrial sectors, and encourages companies to pursue such projects ...."). IEPA acknowledges that the issues of need and clean energy alternatives to Peabody's coal-fired power plant were raised in a timely manner during the public comment process. See Response, Pet. Ex. 12, #19-30.

IEPA offers three arguments in response to comments that it should consider the need for and alternatives to Peabody's proposed facility: (i) IEPA does not have the legal authority to require Peabody to consider or utilize solar power or other renewable technologies; (ii) introducing the consideration of need into the BACT process directly contradicts action taken by the Illinois Legislature to deregulate the generation of electricity; and (iii) IEPA does not have authority to consider need or alternatives to a proposed power plant, like wind turbines, or a smaller power plant as part of its PSD review. None of IEPA's reasons is an adequate or accurate justification for failing to conduct an overall review of air resources allocation.

A. Petitioners Have Never Asserted That IEPA Can Order Peabody to Build a Project Peabody Does Not Wish to Build

IEPA's first response is irrelevant to any issue raised. Petitioners neither asserted in its comments, nor advocates here, that IEPA has the authority to require Peabody to build a wind farm or any other facility that Peabody does not want to build. The issue is whether IEPA is obligated to grant Peabody a permit to build whatever it wants, regardless of the interests of the residents and other businesses in Illinois and downwind states.

B. Actions by the Illinois Legislature Are Instructive but Ultimately Preempted by Federal Law, Especially in a PSD-delegated Permitting Proceeding

IEPA states that "[a]t the State level, the Illinois EPA does not have the legal authority to deliberate upon the 'public necessity' of power plants, in the manner formerly exercised by the Illinois Commerce Commission. Introducing the consideration of need into the BACT process would be in direct contradiction to the action taken by the Illinois Legislature to deregulate the generation of electricity in Illinois ...." Response,

Pet. Ex. 12, #21. Petitioners do not assert that IEPA's obligation to consider need is mandated by state law. Rather, the authority to consider need flows from the federal PSD program administered by IEPA. If Illinois law conflicts with the PSD program, the federal PSD requirements preempt state law. "IEPA's contention that * * * IEPA's role in reviewing PSD preconstruction permit applications is controlled by the substantive and procedural review requirements of [Illinois law] is both inexplicable and plainly erroneous." In re West Suburban Recycling & Energy Center, L.P., 6 E.A.D. 692, 704 (EAB 1996).

However, Illinois electric deregulation in 1997 did not consider, address, or in any way change IEPA's PSD authority and obligation to manage the state's air resources. There is simply no mention of air quality or the IEPA's PSD authority in the Illinois Electric Service Customer Choice and Rate Relief Law of 1997. 220 ILCS 5. The legislation did, however, establish that "[t]he use of renewable resources and energy efficiency resources should be encouraged in competitive markets." 220 ILCS 5(e). Thus there is no conflict, but even if there was, it is the federal PSD regulations, not the provisions of Illinois law, that apply here." West Suburban Recycling, 6 E.A.D at 704 n.17.

C. The CAA Provides IEPA with Broad Authority to Consider Need and Alternatives

IEPA erroneously concludes that rather than requiring it to consider the allocation of air resources, the CAA actually constrains its discretion to consider need and alternatives. Response, Pet. Ex. 12, #28. IEPA's interpretation of its authorities is clearly erroneous. IEPA's broad legal authority emanates from "the bare terms of the law, the statutory context, the legislative history, and the judicial, administrative, and

legislative history preceding the congressional adoption of a PSD program in 1977." Amicus Brief of EPA Region V and EPA Office of Air and Radiation In Response to the Board's Order to Show Cause, In re West Suburban Recycling & Energy Center, L.P, (July 30, 1996), Pet. Ex. 39 at 9[6] ("WSREC Amicus Brief").

1. The Broad Purpose of the PSD Program is To "Protect and Enhance" the Nation's Air Resources by Preventing Air Quality Degradation.

As USEPA explained in its WSREC amicus brief, the PSD program has three central features that advance its general purpose of preventing increases of air pollution that a state finds undesirable. WSREC Amicus Brief, Pet. Ex. 39 at 9. These include the BACT requirements, the prevention of ambient air quality deterioration provisions, and a robust public participation and state decisionmaking process. Section 165(a) of the Act prohibits construction of major stationary sources in PSD areas unless an applicant demonstrates that these and other requirements have been met. 42 U.S.C. § 7475(a). "Taken together, these provisions grant broad powers to the states to address proposed major new sources of air pollution in a manner consistent with the need 'to protect and enhance' air quality." WSREC Amicus Brief, Pet. Ex. 39 at 9.

2. The PSD Permitting Authority Has Broad Discretion in Determining Compliance with BACT and PSD increments.

USEPA has provided a detailed explanation of the BACT provision:

> The technology-forcing component of the PSD program provides that proposed facilities are subject to the "best available control technology" for each pollutant subject to regulation under the Act that is emitted from such facilities. 42 U.S.C. § 7475(d)(4). Congress granted permitting authorities broad discretion to determine BACT in a manner consistent with the environmental protection goals of the PSD program, allowing

[6] This amicus brief is also available at http://yosemite.epa.gov/r5/ardcorre.nsf/0/cd9e210208ff80b0862564b4004b0d18/$FILE/796amic.txt. The original page numbering is not included and the cite page number is based on printing the document from the web directly.

considering of "energy, environmental, and economic impacts." Specifically, the legislative history demonstrates that Congress authorized the concerns of the community regarding the overall impact of the source on air quality to be factored into the BACT components of the PSD permitting decision.

> [W]hen an analysis of energy, economics, or environmental considerations indicates that the impact of a major facility could alter the character of that community, then the State could, after considering those impacts, reject the application or condition it within the desires of the State or local community. Flexibility and State judgment are the foundations of this policy.

See S. Rep. No. 127, 95th Cong., 1st Sess. 31 (1977) reprinted in 3 Senate Comm. on Environment and Public Works, 95th Cong., 2d Sess., A Legislative History of the Clean Air Act Amendments of 1977, at 1405 (1978).

WSREC Amicus Brief, Pet. Ex. 39 at 10.

3. Congress Provides For Procedural Rigor in PSD Permit Reviews to Promote Informed Public Participation and Consideration of all the Consequences of a Decision to Permit Air Quality Deterioration.

Section 165(a)(2) establishes the obligation of a permitting agency to consider, and an opportunity for the public to comment on, alternatives to major new sources of air pollution. For attainment areas, section 165(a)(2) prohibits construction of a new major emitting facility unless "a public hearing has been held with opportunity for interested persons * * * 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." 42 U.S.C. § 7475(a) (emphasis added). As USEPA explains:

> The responsibility of the permitting authority to entertain all air-quality related considerations raised by the public—which subsumes the ability of the state itself to raise these concerns—is consistent with the congressionally declared purpose of the PSD program to consider carefully all of the consequences of a decision to allow increased air pollution. Specifically, a central purpose of the PSD program is:

> To assure that any decision to permit increased air pollution in any [PSD] area ... is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process. 42 U.S.C. § 7470(5).

WSREC Amicus Brief, Pet. Ex. 39 at 11.

IEPA agrees that Section 165(a)(2) requires the holding of a public hearing at which interested persons can offer alternatives to the proposed source. However, the agency does not agree that it has any obligation to consider those public comments, beyond stating that it lacks the authority to consider alternatives:

> The plain language of the Clean Air Act contemplates a public hearing in which interested parties are provided an opportunity to make oral arguments on, among other matters, alternatives to the proposed source. The language does not, as this comment [sic] suggest, require a permitting authority to conduct an analysis or otherwise require from an applicant, information regarding alternate sites, locations or project types. The 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 the area, to comment on alternatives to a proposed source during the permitting process. While the provision requires that a broad range of public comment must be allowed in the permitting process, it cannot be assumed that Congress intended that a wide-ranging analysis of alternatives must be conducted by the permitting authority.

Response, Pet. Ex. 12, #19. IEPA's position renders the very public comments sought and required by the CAA as worse than irrelevant. IEPA offers a scenario in which it would actively solicit public input about alternatives that it has no intention of considering. The CAA and the PSD regulations establish a robust and meaningful public participation framework that requires IEPA to consider "alternatives" (42 U.S.C. § 7475(a)) to major sources of air pollution and "a careful evaluation of the consequences of such a decision," indicating that alternatives actually be considered. 42 U.S.C. § 7470(5).

USEPA has taken the position repeatedly that energy efficiency, other alternatives, and the need of a project are all factors that can and must be considered by a PSD permitting authority if raised during the public comment process. In 1996 USEPA filed a brief in Ecoelectrica, 7 E.A.D. 56 (EAB 1997), in which it stated:

> Energy conservation is central to meaningful air pollution prevention initiatives, and energy conservation considerations are cognizable under the PSD program. Further the EAB has recognized the legal authority under the PSD program to consider alternatives to a proposed source in Hawaiian Commercial & Sugar Company, 4 EAD at 99-100, and Old Dominion Electric Cooperative, 3 EAD at 793-794. These precedents logically encompass the legal discretion to consider energy conservation as an alternative to a proposed source.

Response of EPA Region II and EPA Office of Air and Radiation to Mr. Arana's Petition for Review, Ecoelectrica LNG Import Terminal and Cogeneration Project, (Dec. 24, 1996), Pet. Ex. 40 at 17. Although the Board did not require consideration of need in that case, the Board did not foreclose review when the state refuses to do so.

> [T]he Board did not mean to address the issue of whether, and under what circumstances, the Board could consider a challenge based on alternate means of meeting energy needs. Rather, as in Kentucky Utilities and as in this case, the Board merely meant to suggest that review under 40 C.F.R. § 124.19(a) was not warranted because the need for the power from a proposed facility would 'more appropriately' be addressed by the responsible State authority.

Ecoelectrica 7 E.A.D. at 74 n.25.

USEPA's amicus brief in the subsequent RockGen Energy Center proceeding again states its legal position that a state must actually consider alternatives to avoid review:

> We believe that the EAB should apply the same reasoning here that it did in EcoElectrica regarding consideration of alternatives to a proposed major new source: some entity within state government must have the authority to consider alternatives, including [demand side management] alternatives, to a proposed source when the issue is raised in public comments.

> ....
> We believe that as the PSD permitting authority, the WDNR does have the authority to effectively limit, on air quality-related grounds, the size and type of plant that may receive a PSD permit. This authority should be used, as necessary, to conduct an appropriate analysis.

Amicus Brief of EPA Region V and EPA Office of Air and Radiation In Response to RURAL's Amended Petition For Review and the Responses of WDNR and RockGen., Pet. Ex. 41 at 18-20. Although the Board did not reach the merits of this issue in RockGen because the issue "was not raised with sufficient specificity during the comment period and thus not preserved for review by the Board," (In re RockGen Energy Center, 8 E.A.D. 536, 548 (EAB 1999)), Petitioners in this case did raise the issue in their comments.

Gregory Foote wrote in his thoughtful article Considering Alternatives: The Case for Limiting CO2 Emissions From New Power Plants Through New Source Review that power plants such as Peabody's coal-fired proposal warrant special scrutiny in the PSD permitting process:

> Because the function of any single plant typically is to add to a common pool of electricity supply, the threshold question of need should never be ignored in deciding whether to issue a permit. ... Coal-fired plants in particular merit extra scrutiny because of their tremendous size, longevity, capital and operating costs, demands on fuel suppliers and transmission lines, and adverse environmental impacts. All these public policy concerns are best addressed by reading the CAA as providing no vested right to build a coal-fired plant in any form, and as requiring that every decision to do so only be made after careful consideration of each important aspect of the consequences of that decision. As discussed below, this reading is also the best one under the law.
> ...
>
> The threshold question in considering any prospective new or modified electricity generating plan fired by fossil fuels is why the plant should be constructed at all: obviously, it is preferable from the air quality standpoint to rely on renewable energy and more efficient use of existing resources than construct any new fossil-fuel plant.

34 ELR 10642, 10657-58 (July 2004), Pet. Ex. 42.

In sum, the Clean Air Act affords IEPA significant authority to protect Illinois' air resources and it is not required to blindly issue permits for sources of air pollution that will have significant public health, economic, and environmental impacts for decades into the future. The Board should review this issue because IEPA's position is clearly erroneous and this is also a significant policy issue warranting Board's review.

III. USEPA Failed To Coordinate With Other Federal Agencies' NEPA Reviews in Violation of 40 C.F.R. § 52.21(s)

The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321-4370d, establishes requirements for when a federal agency must prepare an environmental impact statement (EIS). Specifically, NEPA provides that every major federal action significantly affecting the quality of the human environment must be accompanied by a detailed statement on, among other things, the environmental impact of the action, adverse environmental effects, alternatives to the action, and irreversible and irretrievable commitment of resources involved with the action. 42 U.S.C. § 4332. The Clean Air Act and USEPA's PSD regulations establish a specific role for USEPA to coordinate with, and comment on, other federal agencies' NEPA reviews for a proposed project before USEPA may issue a PSD permit for the project:

> 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.

40 C.F.R. § 52.21(s). Section 309 of the Clean Air Act entrusts USEPA with a special statutory duty to review each EIS prepared by every federal agency and comment whether the EIS is sufficient under NEPA. 42 U.S.C. § 7609.

USEPA Office of Air and Radiation and USEPA Region II have previously described to the Board the importance of this NEPA coordination provision:

> [F]or sound environmental policy reasons, EPA endeavors to coordinate its PSD permit review with related environmental review under NEPA. ... EPA's PSD regulations codify this policy, calling for coordination to the 'maximum extent feasible and reasonable.' 40 CFR § 52.21(s). As discussed below, appropriate coordination occurred in this case.

USEPA Ecoelectrica Amicus, Pet. Ex. 40 at 22.

In this Peabody matter there is no evidence that USEPA (or IEPA[7]) investigated whether any federal agency may have a NEPA review role relating to Peabody's proposal, let alone coordinate with other federal agencies "to the maximum extent feasible and reasonable." 40 C.F.R. § 52.21(s). In the records USEPA has provided to Petitioners there is no evidence that USEPA took the most basic step of asking IEPA, Peabody, or other federal agencies to identify the federal actions that may trigger other agencies' NEPA review obligations as the first step in fulfilling its 40 C.F.R. § 52.21(s) duties.

IEPA acknowledges that Petitioners raised USEPA's failure to comply with 40 C.F.R. § 52.21(s) in a timely manner. See Response, Pet. Ex. 12 #317. Petitioners' comments listed various federal actions that may trigger NEPA review by other federal agencies, including permits for water intake and discharge structures from the U.S. Army

[7] USEPA's duty to coordinate its NEPA review with other federal agencies does not appear to be delegable to IEPA. While the language of 40 CFR § 52.21(s) and CAA Section 309 requires USEPA -- not IEPA -- to coordinate and comment on other agencies' NEPA review and there is some logic of having USEPA take the lead in such actions with other federal agencies, Petitioners do not assert that IEPA may not play a significant role in facilitating this coordination and review.

Corps of Engineers and Federal Energy Regulatory Commission approval for new transmission lines. ALA Comments, Pet. Ex. 6 at 6-7. Petitioners recommended USEPA initiate its obligations by first requesting Peabody to disclose, and then independently confirm, all federal actions that may be necessary to construct and operate the proposed facility. Id.

IEPA responded to this comment in three ways: 1) this comment should be directed to USEPA not IEPA, because IEPA cannot fulfill the obligations required by 40 C.F.R. § 52.21(s); 2) the obligation to coordinate is not mandatory; and 3) petitioners have not identified any federal actions associated with the proposed plant that may require the preparation of an EIS. Response, Pet. Ex. 12 # 318. Each of IEPA's responses is clearly erroneous and do not address the failure of either USEPA or IEPA to consult.

First, Petitioners' comments that included the issue of USEPA's NEPA review coordination were addressed and mailed to USEPA Administrator Michael Leavitt and the IEPA Hearing Examiner. See ALA Comments, Pet. Ex. 6 at 1, 6-7. USEPA's failure to respond does not, however, mean that IEPA can simply ignore the issue and issue the permit absent USEPA fulfilling its 40 CFR § 52.21(s) coordination obligations. Second, and notwithstanding IEPA's curious statement to the contrary, USEPA's obligation to coordinate is mandatory. The rule requires that USEPA "shall" coordinate. 40 C.F.R. § 52.21(s). The only latitude granted by the regulation is the degree of coordination, though that too is constrained. The PSD regulation language -- promulgated by USEPA -- uses the strong normative term "maximum" in defining the degree of coordination required. Coordination to the "maximum extent feasible and reasonable" means more than the absolute lack of coordination. The purpose of the regulation is to require

USEPA to coordinate its PSD review with other agencies' NEPA review prior to issuance of a PSD permit; a purpose which is not advanced by allowing USEPA and IEPA to ignore the coordination obligation. Moreover, coordination facilitates a public understanding of the entire project and not fragmenting review over different time periods. See e.g. 40 C.F.R. 1500.1 ("Federal agencies shall to the fullest extent possible: ...(c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.").

Third, contrary to IEPA's statements, Petitioners did identify at least two federal actions relating to Peabody's proposed project that may require NEPA review. Specifically, Petitioners wrote:

> There are several "actions" by other federal agencies associated with this project that "might" trigger the requirements of the National Environmental Policy Act ("NEPA") and the obligation to prepare an EIS. ... For example, the U.S. Army Corps of Engineers may need to grant a permit under the Clean Water Act and/or Rivers and Harbors Act for the water intake and water discharge structures. The granting of a permit by a federal agency is subject to NEPA. Peabody's application indicates that the Federal Energy Regulatory Commission must grant approval for certain transmission lines. Other FERC actions potentially subject to NEPA include granting of Exempt Wholesale Generator and Inter-Tie Approval.

ALA Comments, Pet. Ex. 6 at 7. Petitioners met their burden by identifying federal actions that "might necessitate preparation of an environmental impact statement." 40 C.F.R. § 52.21(s). That is all the law requires. The Board should not hold citizens to the unreasonable standard IEPA proposes, i.e. that citizens must affirmatively prove that NEPA review is required by another agency to prevent USEPA from avoiding its CAA and NEPA obligations. 40 C.F.R. § 52.21(s).

In addition, IEPA identifies another likely federal agency role when it states that "the proposed [Peabody] plant will have a rail spur." Response, Pet. Ex. 12 #302. Construction of a rail spur may require approval and NEPA review by the federal Surface Transportation Board. Less than two weeks ago the Surface Transportation Board announced that it had prepared an Environmental Assessment (EA) regarding a request by Ameren Energy for authority to construct and operate one of two rail lines in Illinois: A 13.5-mile line in Montgomery County or a 4.6-mile line in Montgomery and Bond Counties. 70 Fed. Reg. 30,183 (May 25, 2005). In this federal register notice the STB sought public comments on the proposed EA.[8]

The failure of USEPA to comply with 40 C.F.R § 52.21(s) is clear error and the Board should remand the permit for USEPA to comply with the mandatory coordination and review requirements. USEPA's compliance with this coordination provision is spotty and untimely at best.[9] Therefore, Board review is important to clarify this significant policy issue and describe the respective roles of USEPA and IEPA in implementing this PSD coordination provision.

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[8] An environmental assessment is "prepared to provide sufficient data and analysis to determine whether an EIS or finding of no significant impact is required." 40 C.F.R. § 6.105(d).

[9] For example, there is no evidence that USEPA (or IEPA) coordinated with the U.S. Army Corps of Engineers prior to IEPA issuing Indeck-Elwood a PSD permit in October 2003, even though subsequent to receiving its PSD permit Indeck applied for a federal wetland fill permit and this necessitates NEPA review. USEPA's failure to comply with 40 C.F.R. 52.21(s) in the Indeck situation is allowing the project proponent to fragment the environmental review of that project over several years and shut out the public from having an opportunity to review the entire project, including all of the necessary permits, in a reasonable time period.

Similarly in 2002 IEPA issued a PSD permit for the Elkhart coal-fired power plant in central Illinois again without USEPA complying with its NEPA review and coordination duties. It was not until two years later that the U.S. Department of Energy released a draft EIS for the Elkhart project and at that time USEPA pursuant to its Clean Air Act Section 309 obligations submitted comments on the DEIS. It is hard to explain USEPA's failure to fulfill its NEPA coordination and review role in a timely manner in the Elkhart proceeding – aside from the fact that it does not take this mandatory duty seriously -- because DOE began its NEPA review of Elkhart's project in 1996, six years before IEPA issued the PSD permit.

IV. IEPA Erred As a Matter of Law in Rejecting IGCC

IEPA erred as a matter of law in reaching its conclusion that integrated gasification combined cycle technology ("IGCC") was not the best available control technology ("BACT") for Peabody. The agency did not correctly apply the test mandated by the applicable regulations, nor did IEPA assemble the facts necessary to determine the outcome of that test. Accordingly, the Board should remand the permit with instructions to IEPA to both assemble a record of relevant facts and properly apply those facts to the correct test, as set forth in more detail below. See In re: Knauf Fiber Glass, 8 E.A.D. 121, 142 (EAB 1999) ("Incomplete BACT analyses are grounds for remand.").

A. IEPA Found that IGCC is Available

A new major stationary source of air pollution "shall apply best available control technology for each regulated [air] pollutant that it would have the potential to emit in significant amounts." 40 C.F.R. § 52.21(j)(2) (applicable by virtue of 40 C.F.R. § 52.738(b)). "Best available control technology" ("BACT") is defined as

> an emissions limitation . . . based on the maximum degree of reduction for each pollutant subject to regulation under [the Clean Air] Act which would be emitted from any proposed major stationary source . . . 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 of innovative fuel combustion techniques for control of such pollutant.

Id. § 52.21(b)(12).

IEPA does not deny that applying IGCC would maximize the reduction of regulated air pollution from Peabody's proposed facility. Response, Pet. Ex. 12, #37

("Significantly lower emission rates are certainly the promise of IGCC technology.").[10] Nor does the agency deny that IGCC is a technically feasible "production process[] or * * * method[], system[], [or] technique[]" for the "proposed major stationary source." Id. ("The Illinois EPA did not dismiss IGCC technology as * * * being technically infeasible * * *."). Indeed an earlier version of the responsiveness summary asserted that "use of IGCC technology at the proposed plant * * * would * * * generally be feasible at a mine-mouth power plant at the same location using the available reserve of coal." IEPA Responsiveness Summary for Public Questions and Comments on the Construction Permit Application from Prairie State Generating Company (January 2005) ("Original Responsiveness Summary") at #20. IEPA in its revised April 2005 responsiveness summary deletes this sentence without a reasoned analysis for this substantial change in position.

Although IEPA seems to conclude that IGCC is not available, see, e.g., id. #5 (noting that "claims * * * that the technology is available * * * do not survive close scrutiny"), the agency later insists that it "did not dismiss IGCC technology as not being available, id. #36, and even declares that "IGCC is technically feasible." Id. #35. Indeed, the indices of availability recognized in past Board decisions and in the NSR Manual[11] allow only one conclusion in this case: that IGCC is available. Two coal-fueled IGCC

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[10] Also compare Wisconsin DNR Permit No. 03-RV-166 at 110-121 (Jan. 14, 2004) (permitted emissions rates for coal-fueled IGCC unit at proposed Elm Road Generating Station) to id. at 2-20 (permitted emissions rates for non-IGCC coal-fueled units).

[11] See NSR Manual (Oct. 1990), at B.5 - B.7. In keeping with the stringent nature of the BACT requirement, the EAB has repeatedly emphasized that "available" is used "in the broadest sense under the first step and refers to control options with a "practical potential for application to the emissions unit" under evaluation. . . . The goal of this step is to develop a comprehensive list of control options." *Knauf*, Appeal Nos. 98-3 – 98-20, at 12-13 (quoting NSR Manual at B.5) (emphasis added by EAB); *see also In re: Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 and 99-5 (EAB June 22, 2000), at 29 n.24 (citing *Knauf* with approval); NSR Manual at B.10 ("The objective in step 1 is to identify all control options with potential application to the source and pollutant under evaluation."); *id.* at B.6 (emphasizing that a proper Step 1 list is "comprehensive").

electric generating units are operating in the United States already,[12] and two other such units are operating in Europe.[13] NSR Manual (Oct. 1990) at B.5 ("Available control options . . . include[] technologies employed outside of the United States."). The Wisconsin Department of Natural Resources issued a construction permit for a coal-fueled IGCC electric generating unit in 2004.[14] See NSR Manual at B.18 ("In general, a commercially available control option will be presumed applicable if it has been or is soon to be deployed (*e.g.*, is specified in a permit) on the same or a similar source type.").

In addition, IEPA had before it at the time the permit decision was reached at least one submitted application for a commercial IGCC plant. In 2004, Steelhead Energy Co. filed a construction permit application with IEPA for an IGCC unit that is scheduled to begin generating 545 MW of electricity from Illinois coal as early as 2009.[15]

While IEPA in its Revised Responsiveness Summary argues for the first time that the Steelhead application does not "demonstrate that IGCC technology is available for the proposed plant," Pet. Ex 12, #40, IEPA is simply wrong on this point. IEPA first incorrectly and misleadingly characterizes Steelhead as a "'special' or 'exceptional' project[]." Id. It is neither. While IEPA attempts to distinguish Steelhead as smaller

[12] Tampa Electric Company operates a 262 MW IGCC unit at the Polk plant in Florida, and Cinergy operates a 192 MW IGCC unit at the Wabash River plant in Indiana. Resource Systems Group, Inc., EPIndex (available at www.epindex.com). *See also* Report of the National Energy Policy Development Group (May 2001) (available at www.whitehouse.gov/energy/National-Energy-Policy.pdf), Chp. 3, at 6 ("Two plants demonstrating coal gasification technology have already been built in the United States and have achieved over 98 percent SO_2 reduction, 90 percent NOx reduction, particulate emissions below detectable levels, and approximately 38 percent efficiency.").

[13] NUON/Demkolec is a 253 MW IGCC plant in the Netherlands, and ELCOGAS is 298 MW IGCC plant in Spain. Major Env'tl Aspects of Gasification-Based Power Generation Technologies (Dec 2002), Table 1-7, page 1-26.

[14] Wisconsin DNR Permit No. 03-RV-166 at 110-121.

[15] "Construction & Contracts," Power Engineering (Jan. 1, 2005); "Steelhead's State Grant to Fund Coal Gasification Plant Design," Platt's Coal Outlook (Nov. 22, 2004); "Steelhead Energy Awarded $2.5 Million Clean Coal Grant for Illinois Coal Gasification Project, Files Air Permit Application with Illinois EPA," PR Newswire (Nov. 11, 2004); "Coke, Coal Gasification to Ultra-Clean Fuels, Power, Hydrogen Passes Turning Point; 'Polygen' Revolution Starts," Gas-to-Liquids News (Nov. 1, 2004).

than the proposed plant,[16] that fact is irrelevant to the question whether some combination of several 610 MW units could and should be considered an alternative to the 1500 MW project Peabody proposes. In addition, IEPA mistakenly and misleadingly asserts that the Steelhead application "includes a substitute natural gas plant." Id. In fact, the Steelhead natural gas plant is entirely separate from the IGCC proposal; -- it is not a "substitute" for the IGCC option. The inclusion of a natural gas plant in the same air permit application does not diminish the feasibility or viability of IGCC.

While IEPA is correct that "the fact that an application has been submitted does not demonstrate that a proposed plant will be built," id., the inference that IEPA attempts to draw from this — that the fact that an application exists has no relevance to an ongoing BACT determination — is not correct. IEPA is not at liberty simply to ignore evidence before it about the availability of a particular alternative technology. While IEPA is not "ignoring" Steelhead per se, in its Revised Responsiveness Summary, it is ignoring the air permit application submitted by Eastman Chemical Company in partnership with the ERORA Group on April 14, 2005, for another IGCC unit to be fueled with Illinois Basin coal, with a schedule to begin commercial operations in 2009 or 2010.[17] Several other companies also have announced plans to begin operating full-scale coal-fueled IGCC electric generating units in various other states by the time Peabody could start operating.[18] For example, on March 18, 2005, AEP filed an application with the Public

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[16] There is no technological limitation on the number of IGCC units that can be constructed at a site, just as there is no limitation on the number of pulverized coal units – a 1500 MW plant can be made up of three 500 MW IGCC units as easily as it can be made up of two 750 MW pulverized coal units.

[17] "Eastman Chemical Company and The ERORA Group to Pursue Gasification Project in Christian County, Illinois," Press Release by Eastman Chemical Company and The ERORA Group (2/17/05).

[18] Kate McCann, "AEP Plans to Build 'Clean Coal' Plant," Associated Press (Sept. 1, 2004); CINERGY, Air Issues Report to Stakeholders (Dec. 1, 2004), at 2 (available at http://www.cinergy.com/pdfs/AIRS_12012004_final.pdf); "Industry Split on Type of Clean-Coal Technology Eligible for Government Support," Inside EPA (Aug. 4, 2004) ("Julie Jorgensen of Excelsior Energy . . . presented the details of a planned IGCC project in Minnesota, the Mesaba Energy Project,

Utilities Commission of Ohio seeking permission to build a new IGCC plant, with the intent of building as much as 1200 MW of electric generating capacity. See http://www.aep.com/newsroom/newsreleases/default.asp?dbcommand=DisplayRelease&ID=1190. In light of these new IGCC proposals by private companies, it is not surprising that air agencies in ten states already have declared that IGCC is an available method for controlling air pollution from coal-fueled electric generating units.[19] Even the National Coal Council, a federal advisory committee reporting to the U.S. Secretary of Energy, has held since 2001 that IGCC is "a viable, commercially available technology" for generating electricity from coal.[20]

B. IEPA Erred as a Matter of Law in Applying an "Inachievable Financing" Test to Conclude That IGCC is Unachievable

IEPA did not find IGCC technology unavailable, but rather improperly rejected IGCC on the basis of its conclusion that the technology was not "economically achievable" for Peabody's proposal. Specifically, the agency concluded that the relatively high construction cost and relatively short operational history of coal-fueled IGCC electric generating units in the United States precluded adequate financing of an IGCC facility. Response, Pet. Ex. 12, #3 ("IGCC * * * cannot yet be considered viable for privately financed power plant projects that are not guaranteed a revenue stream or

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noting the company successfully pushed legislation in the state to encourage siting of IGCC plants and is pushing to install the technology in 2010 at a plant with a 531 megawatt capacity for power generation.").

[19] Letter from the New Mexico Environment Department to Mustang Energy Corporation (Aug. 29, 2003); Letter from New Mexico Environment Department to Mustang Energy Corporation (Dec. 23, 2002); Letter from New Mexico Environment Department to U.S. Environmental Protection Agency, Region 9 (Oct. 8, 2004), at 1; Findings of Fact, Conclusions of Law, and Order in the Matter of the Air Quality Permit for the Roundup Power Project, Case No. 2003-04 AQ, Board of Environmental Review of the State of Montana (issued June 11, 2003, approved June 23, 2003); Amicus Brief of Northeast States for Coordinated Air Use Management in the Matter of the Air Quality Permit for the Thoroughbred Generating Station (Dec. 22, 2004); Amicus Brief of Northeast States for Coordinated Air Use Management in the Matter of the Air Quality Permit for the Elm Road Generating Station (Nov. 30, 2004).

[20] National Coal Council, Increasing Electricity Availability from Coal-Fired Generation in the Near Term (May 2001), at 27.

return on investment."); id. #29 ("the uncertainty about the performance and cost of [IGCC] would prevent the plant from being developed with gasification technology.").

IEPA applied the wrong test, however, in making this assessment. 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." Id., #39. IEPA goes on to note that "the real or perceived risk from use of IGCC technology * * * is too large for current investors, especially when it adds to the financial risk associated with constructing a new large coal-fired power plant." Id. This basis for rejecting IGCC is clearly erroneous, both as a matter of law and a matter of fact. First, IEPA twists the analysis required in the BACT regulations, 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. That is error as a matter of law.

Second, even if the availability of financing for a project were an element in the cost analysis, a correct analysis would include a comparison of the availability of financing for both IGCC and pulverized coal, and would take into account the availability of public subsidies for IGCC. This both the applicant and IEPA failed utterly to do[21] – a clear factual error in the application of the "financial availability" test, which itself was erroneous as a matter of law. Furthermore, IEPA's "analysis" contained in the Responsiveness Summary completely ignores the fact that it had before it an application for a privately- and publicly- financed IGCC unit at the time it made its Peabody PSD

[21] The applicant's submission, a report by Donald J. Wilhelm, SFA Pacific, Inc., entitled "Evaluation of IGCC to Supplement BACT Analysis of Planned Prairie State Generating Station" (May 11, 2003) fails even to mention the fact that public subsidies are available for IGCC development in Illinois (and elsewhere).

permit decision.[22] The developers of the Steelhead Energy plant had submitted to IEPA a permit application during the period when the PSGS decision was under consideration. The application for the Steelhead plant, which states that its developers plan for it to become operational in 2009, clearly demonstrates that private investors are interested in IGCC technology, in the very state where Peabody's facility is proposed, and in the timeframe that Peabody seeks to builds a pulverized coal plant.

Even assuming the test employed by IEPA to determine "economic achievability" of an IGCC unit were the correct test, the agency's reasoning in applying it is invalid. First, IEPA's analysis is completely circular -- it assumes its very outcome by asserting that financing is unavailable for IGCC because IEPA is declaring financing is unavailable for IGCC. Second, this assumption ignores facts available to the Agency at the time the permit decision was made, and supporting the opposite conclusion, namely that private and public financing is available to IGCC units in Illinois. Indeed, the State of Illinois has pledged to provide a public subsidy for Peabody that includes "up to $1.7 billion in state bonds." Press Release, "Gov. Blagojevich Highlights $2 Billion Clean Coal Technology Project," Office of the Governor (February 7, 2005) (hereinafter "Governor's Press Release") (attached as Pet. Ex. 15). IEPA fails to mention this public subsidy for Peabody or whether a similar (or greater) subsidy would be available to Peabody if it were to consider an IGCC plant. This is a clear error of fact and of law, particularly where IEPA acknowledges that "[s]ignificantly lower emission rates are certainly the promise of IGCC technology," (Response, Pet. Ex. 12, #37), and that "[l]ower CO_2 emissions are one of the benefits hoped for with IGCC technology, both due to the

[22] "Steelhead Energy Awarded $2.5 Million Clean Coal Grant for Illinois Coal Gasification Project, Files Air Permit Application with Illinois EPA," PR Newswire (Nov. 11, 2004). See also http://www.epa.state.il.us/gallery/air/Coal_A, last visited February 22, 2005 (photo of Steelhead's developers submitting air permit application to IEPA).

improvements in energy efficiency and potential for sequestration of CO_2." Id., #41. IEPA has clearly erred in its BACT analysis as a matter of fact, because it cannot rationally both reject IGCC technology because financing is not available while at the same time completely failing to discuss the availability of public subsidies from the state to electricity projects utilizing "state of the art technologies." Governor's Press Release, Pet. Ex. 15 at 1.

IEPA's analysis also is woefully inadequate because it is fundamentally incomplete, speculative and does not represent a reasoned basis for decisionmaking. IEPA's rejection of IGCC is based solely on the notion that private investors *might* not be interested in this technology. But the agency's analysis completely ignores two fundamental points about financing for the facility. First, IEPA ignores the point that there are publicly available subsidies for IGCC development. Second, IEPA ignores the point that a state's assertion that IGCC is BACT will necessarily make private investors far more interested. Put differently, the appropriate question here is whether an IGCC version of Peabody's proposal could attract adequate investment if Illinois EPA and/or the EAB effectively placed 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. Indeed, Petitioners assert that it is no mere coincidence that the Steelhead IGCC and Eastman Chemical/ERORA IGCC plants' air permit applications, have followed closely on the state's decision that IGCC must be considered as part of the BACT demonstration supplied in a PSD application for a coal-fired power plant. See Letter from Renee Cipriano, Director IEPA, to Thomas Skinner, Regional Administrator, Region V, USEPA (March 19, 2003) (announcing IEPA's conclusion that "it is appropriate for applicant for [coal-fired power] plants to consider

IGCC as part of their BACT demonstrations.") (Attached as Pet. Ex. 18); see also Letter from IEPA to Indeck-Elwood LLC (March 8, 2003) (formally notifying the applicant of the need to supplement its proposal to address IGCC as part of the BACT demonstration) (also attached as Pet. Ex. 18).

Alternatively, of course, private investors might shun Illinois IGCC coal power projects in favor of conventional, pulverized coal power projects, but only if they felt confident that the conventional projects lawfully could still easily receive construction permits in Illinois and other states.

IEPA's reason for rejecting IGCC as economically unachievable is clearly erroneous as a matter of fact and law because it ignores that "one of the world's leading energy infrastructure investing firms" is currently moving forward with a proposal to build, in Illinois, an IGCC power plant that would run on Illinois coal.[23] What is both dispositive and beyond dispute is that neither Peabody nor IEPA addressed the question whether private investors would be far more interested in IGCC following a state decision that IGCC is BACT, nor did they acknowledge the heightened interest in IGCC among private investors in Illinois in the past 12 months. This is so even though both Peabody and the IEPA made projections of investor behavior central to their rejection of IGCC. See, e.g., id. at #7, #15, ##18-19. "The top-down approach places the burden of proof on the applicant to justify why the proposed source is unable to apply the best technology available." Citizens for Clean Air v. EPA, 959 F.2d 839, 845 (9th Cir. 1992) (citing In re Spokane Regional Waste-to-Energy Applicant, PSD Appeal No. 88-12 (EPA June 9, 1989), at 9) (internal quotation marks omitted) (emphasis in original). See also In

[23] "Steelhead Energy Awarded $2.5 Million Clean Coal Grant for Illinois Coal Gasification Project, Files Air Permit Application with Illinois EPA," PR Newswire (Nov. 11, 2004).

re Inter-Power of New York, Inc. 5 E.A.D. 130, 135 (EAB 1994) ("Under the 'top-down' approach, permit applicants must apply the most stringent control alternative, unless the applicant can demonstrate that the alternative is not technically or economically achievable."); In re Pennsauken County, New Jersey Resource Recovery Facility, PSD Appeal No. 88-8 (EAB Nov. 10, 1988) ("Thus, the 'top-down' approach shifts the burden of proof to the applicant to justify why the proposed source is unable to apply the best technology available.").

As a matter of fact and law, then, IEPA's conclusion that IGCC was economically unachievable for Peabody was in error. This is not a valid basis for rejecting IGCC technology. Accordingly, the EAB should remand the permit and instruct IEPA to conduct a valid top-down BACT analysis that may only reject IGCC on a reasoned and legitimate basis. Pennsauken County, PSD Appeal No. 88-8 at 11-12 ("The applicant's BACT analysis * * * does not contain the level of detail and analysis necessary to satisfy the applicant's burden * * * of showing that [the] technology [in question] is technically or economically unachievable for this source. The applicant's assertions that the technology has not yet been demonstrated to be efficient, reliable, and cost effective in controlling NO_x are merely conclusory.").

V. IEPA Failed to Adequately Consider Low-Sulfur Coal as a Pollution Control Option in Its Top-Down BACT Analysis

Petitioners and others noted in public comments that low-sulfur coal should have been evaluated in the BACT analysis. Response, Pet. Ex. 12, #46-53. Low-sulfur coal can achieve lower SO2 emissions because it results in less SO2 created and released in the combustion process. Lowering the sulfur input and maintaining the same pollution control train efficiency proposed by Peabody would result in a lower SO2 emission rate.

For example, if Peabody were to burn a coal with 2% sulfur it would emit half as much SO2 as a coal with 4% sulfur, all else being equal.[24] The record shows that if Peabody were to use low-sulfur coal it could achieve an SO_2 emission rate as low as 0.05 to 0.06 lb/MMBtu. Response, Pet. Ex. 12, #119-120. Peabody's permit establishes a SO2 limit of 0.182 lb/MMBtu over a 30-day rolling average and is based on the burning of high-sulfur coal. Revised Permit, Cond. 2.1.2 (b)(ii)(A), Pet. Ex. 1. To the extent IEPA gives a reason for rejecting low-sulfur coal, its reasons fail.

A. Contravenes the Definition of BACT

IEPA repeatedly asserts that considering low-sulfur coal is outside of the scope of the project and would redefine the source because Prairie State is a mine-mouth plant designed to use a specific fuel. Id., #46, #52 #108, #109, #119-120. Thus, according to IEPA, it need not consider "alternate sources of coal, e.g., low-sulfur western coal from Wyoming or Montana [because] the proposed plant is being designed and developed to burn high-sulfur Illinois coal, the locally available coal." IEPA 4/27/05 Memo at 9. According to IEPA's mischaracterization of "redefining" the source, a permit applicant could avoid a full BACT review by proposing a specific dirty fuel. Taken to its logical conclusion, IEPA's interpretation 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.

[24] The use of a lower sulfur coal has other benefits, including reducing corrosion and hence maintenance of the boilers and pollution control train, reducing the cost of the sulfur control technologies, i.e., Wet-FGD and wet electrostatic precipitator; and reducing constraints claimed by Peabody for alternate more efficient control technologies for other pollutants, such as a baghouse to control PM/PM10. These benefits were not addressed in the response to comments or elsewhere in the record.

Moreover, IEPA's rejection of lower sulfur coals as redefining the source is contrary to the plain language of the definition of BACT and previous Board decisions:

> The phrases, 'clean fuels' was added to the definition of BACT in the 1990 Clean Air Act amendments. EPA described the amendment to add 'clean fuels' to the definition of BACT at the time the Act passed, 'as * * * codifying its present practice, which holds that clean fuels are an available means of reducing emissions to be considered along with other approaches to identifying BACT level controls.' EPA policy with regard to BACT has for a long time required that the permit writer examine the inherent cleanliness of the fuel.

In re Inter-Power of New York, 5 E.A.D. 130, 134, (EAB 1994) (internal citations omitted). In fact, the Board could not have been more clear that a "BACT analysis should include consideration of cleaner forms of the fuel proposed by the source." In re: Old Dominion Electric Cooperative, 3 E.A.D. at 794, n. 39 (EAB 1992). Contrary to IEPA's assertion that requiring low-sulfur coal would impermissibly redefine the source, the Administrator has previously determined that requiring natural gas as a cleaner fuel does not redefine the source. In re Hibbing Taconite Company, 2 E.A.D. 842-843 (EAB 1989). Clean fuels must be evaluated for all projects, including mine mouth coal plants. The failure of IEPA to consider low-sulfur coal for Peabody's proposed coal-fired power plant is a clear error.

B. IEPA Did Not Conduct a Responsive Analysis

IEPA claims that the "use of lower-sulfur coal from outside of the Illinois basin was considered." Response, Pet. Ex. 12 #108. Elsewhere IEPA claims that it evaluated scenarios in which a change in the sulfur content of the coal burned would only result in a small lessening of the control efficiency of the scrubber. Response, Pet. Ex. 12 #113. Merely stating that something was considered does not make it so. IEPA offers no citations to any document to support its conclusion that it considered and lawfully rejected low-sulfur coal in its BACT analysis. The record lacks any BACT analysis of

clean fuels. After the Board remanded the first Peabody permit, IEPA quickly compiled a BACT summary which claims that lower sulfur coals were not considered because they are inconsistent with the scope of the project (IEPA 2005 Memo, Pet. Ex. 43 at 9); contradicting IEPA's statements elsewhere that it "considered" low-sulfur coal.

Failing to consider potentially available pollution control technologies necessitates a remand. In re Genesee Power Station, 4 E.A.D. at 868 (EAB 1998). Low-sulfur coal is "available" within the meaning of BACT because it is used at the majority of the coal-fired power plants in Illinois. Response, Pet. Ex. 12, #47. Thus, a remand is necessary because IEPA failed to consider this clean fuel control option.

Even if a total switch to low-sulfur coal could be argued to "redefine" a mine-mouth coal plant, Peabody has ready access to clean fuel that could be blended with the high-sulfur mine-mouth coal. For example, if on-site coal were blended with twenty percent low-sulfur coal containing 0.5 percent sulfur from off-site sources it could reduce SO2 emissions by about 18 percent, from 0.182 lb/MMBtu to 0.15 lb/MMBtu (0.182x3.3/4.0). Alternatively, selectively mining lower-sulfur coal from different parts of the mine and blending could also reduce SO2 emissions. See, e.g., Response, Pet. Ex. 12 #107. IEPA rejects this alternative without analyzing it in a BACT analysis (response, Pet. Ex. 12 #107), without any evidence and despite the fact that Peabody is proposing this very strategy at its proposed Thoroughbred Generating Station in Kentucky. Neither of these alternatives requires abandoning the mine-mouth aspect of Peabody's proposal and even under IEPA's definition would not redefine the project.

C. IEPA's Assertion that Low-Sulfur Coal Is Not Cost-Effective Is Unsupported by the Record

Petitioners and others noted that the widespread use of low-sulfur coal in Illinois and elsewhere indicates that the fuel is technically feasible and cost effective. Response, Pet. Ex. 12, #46, #48. IEPA responded that widespread use "does not show that its use would be cost-effective at the proposed plant." Id. #48. This response places Petitioners in the situation where the law places Peabody. The obligation to demonstrate that low-sulfur coal is not cost-effective rests with Peabody:

> [T]he applicant should demonstrate to the satisfaction of the permitting agency that costs of pollutant removal for the control alternative are disproportionately high when compared to the cost of control for that particular pollutant and source in recent BACT determinations. If the circumstances are adequately documented and explained in the application and are acceptable to the reviewing agency they may provide a basis for eliminating the control alternatives.

NSR Manual B.32 (emphasis added). Hibbing Taconite Company, 2 E.A.D. at 842 (when a clean fuel is in use elsewhere, it is presumed cost-effective absent detailed consideration of objective economic data in the record); see also NSR Manual at B.29. ("In the absence of unusual circumstances the presumption is that sources within the same category are similar in nature and that cost and other impacts that have been born by one source of a given source category may be borne by another source of the same source category."). Neither IEPA nor Peabody has "adequately documented and explained" why low-sulfur coal is not cost-effective. NSR Manual at B.32.

IEPA also asserts, again without any documentation, that prices of western low-sulfur coal have increased substantially in recent years due to increased demand and increases in the price of oil. Response, Pet. Ex. 12 #46. A general rise in some coal prices is irrelevant to the BACT determination. The relevant question is whether the cost effectiveness of low-sulfur coal is within the range borne by other applicants. Hibbing, 2

E.A.D. at 842-842 and n. 11. Had IEPA investigated the issue of low-sulfur coal prices it would have discovered that western low-sulfur coal is only one type of low-sulfur coal. Lower sulfur coals are available from other non-western states, including Kentucky. Thus, even if higher western coal prices were a sufficient basis to reject a top-ranked control option the record does not support this claim. And, of course, it curious that IEPA worries about the price of western coal for a project proposed by Peabody Energy – the self-proclaimed world's largest coal company – and #1 seller of western coal (http://www.peabodyenergy.com/index-ie.html).

IEPA also defends its decision to not consider low-sulfur coal based on concerns about Peabody's business needs. "[T]he selection of the planned fuel supply for the proposed plant involved a business decision by the source * * *." Response, Pet. Ex. 12 #47. This is a patently unlawful basis for a BACT analysis. IEPA's "appreciation for [Peabody's] contribution to the local economy -- is not an accepted justification in the top down [BACT] approach." Alaska v. U.S. E.P.A., 298 F.3d 814, 823 (9th Cir. 2002).

D. Source of Fuel Is Irrelevant to BACT Determination

IEPA also argues that BACT only requires considering low-sulfur coal in states such as New York and Hawaii that do not have local coal reserves. Response, Pet. Ex. 12 #47. Not surprisingly, IEPA cites no authority for this proposition. The existence of a local coal reserve is not a valid reason to decline to review low-sulfur coal as an available control technique.

E. The Use of Scrubbers Does Not Excuse the Evaluation of Clean Fuels

IEPA implies that if existing coal plants in Illinois had scrubbers the use of low-sulfur coal would not be cost-effective. Response, Pet. Ex. 12, #46. No support is provided for this incorrect claim. First, new coal-fired power plants currently proposed

and under construction in other states are planning to use low-sulfur coal and scrubbers, e.g., MidAmerican in Iowa, Weston 4 in Wisconsin, Plum Point Station in Arkansas, and Sandy Creek power station in Texas, precisely because this combination of pollution controls is deemed cost effective.[25] Second, USEPA BACT expert, Matt Haber, has concluded BACT for SO2 at the nearby Illinois Power Baldwin coal plant is low-sulfur coal and a scrubber. See Haber Report, attached to Dr. Fox's Comments, Pet. Ex. 5 (at Ex. 2). IEPA's speculation as to whether low-sulfur coal at existing power plants makes scrubbers not cost effective cannot substitute for a reasoned cost-effective analysis. Had IEPA conducted such an analysis chances are that it would conclude along with the permitting authorities in Iowa, Wisconsin, Arkansas and Texas that scrubbers are cost-effective on low-sulfur coal.

F. IEPA Rejected Using Non-Local Coal Without Adequate Evaluation

IEPA states that "the impacts of using a non-local coal are excessive if the emissions from the local coal supply can be appropriately controlled." Response, Pet. Ex. 12 #46. Again, IEPA does not support this statement, explain how the use of a non-local coal would result in excessive emissions, or quantify and compare the emissions associated with a local high-sulfur coal versus low-sulfur coal. IEPA must document these reasons if it rejects a top-ranked alternative control option.

Although the permit should be remanded because IEPA failed to document any collateral impacts as a basis for rejecting low-sulfur coal, it should also be noted that IEPA's unsupported conclusions are erroneous. In 1999 the U.S. Department of Energy prepared a life cycle assessment of coal-fired power production comparing the emissions

[25] See http://www.epa.gov/ttn/catc/dir1/natlcoal.xls (last visited 2 20.2005).

associated with mining, transporting and burning coal for electricity. Here is what DOE concluded:

Table 1: Distribution of Emissions[26]
(% of Total per kWh)

Pollutant	Mining	Transportation	Electricity Generation
NOx	1.42	5.51	93.06
PM	0.14	0.20	99.66
SO2	1.06	1.42	97.42

Over 90 percent of the emissions from power production arise from the burning of coal for electricity, not the associated mining and transportation of coal for a non-mine mouth facility as IEPA concluded without analysis. To put this in perspective, low-sulfur coals contain about 0.5% sulfur, compared to Peabody's proposed 4.0% sulfur coal, or eight times less sulfur. Therefore, burning low-sulfur coal at Peabody's proposed power plant would reduce SO2 emissions from an estimated 11,878 tons/year to 2,969 tons/year, i.e., a reduction of 8,909 tons of SO2 per year.[27] In other words, any reduced pollution from the mining and transportation of coal accounts for – at most –1/39 of the increased pollution at Peabody from burning high-sulfur coal.

G. The Future Cost of Low Sulfur Coal is Irrelevant to BACT

IEPA rejects low sulfur coal, in part because "[i]t would entail reliance on a fuel supply whose future cost and value is uncertain" and uncertainty about the future cost of

[26] Pamela L. Spath, Margaret K. Mann, and Dawn R. Kerr, Life Cycle Assessment of Coal-Fired Power Production, U.S. Department of Energy, National Renewable Energy Laboratory Report NREL/TP-570-25119, June 1999, Table 25, available at http://www.nrel.gov/docs/fy99osti/25119.pdf (last visited 2.20.2005).

[27] Permitted emissions =(2 boilers) (7,450 MMBtu/hr)(0.182 lb SO2/MMBtu)(8760 hr/yr)/2000 lb/ton = 11,878 ton/yr. Emissions using 0.5% coal = permitted emissions/4 = 2,969 ton/yr. Decrease in emissions from use of low sulfur coal: 11,878 – 2,969 = 8,909 ton/yr.

crude used to power trains used to import the coal. Response, Pet. Ex. 12 #108. "[M]ere generalizations about the economic woes of the steel industry are not enough." Hibbing, 2 E.A.D. at 843, see also NSR Manual B.31 ("In the economical impacts analysis, primary consideration should be given to quantifying the cost of control and not the economic situation of the individual source."). More important still, Peabody owns large low-sulfur coal reserves in other states.

In summary, the SO2 limit for Peabody is not BACT because it does not reflect the "maximum degree" of sulfur reduction. 42 U.S.C. § 7479(3). IEPA failed to consider "clean fuels" as required by the statute. Nowhere in the record is there a lawful top-down BACT analysis that lawfully excludes "clean fuel" low-sulfur coal. This is clear error and the Board should remand on this issue. The use of clean fuels is also an important policy consideration that the Board should review.

VI. Peabody Has Not Demonstrated That Emissions From the Facility Will Not Cause or Contribute to Air Pollution in Excess of the Ozone and Fine-Particulate Ambient Air Quality Standards

The Clean Air Act states that, in order to procure a permit, the owner or operator of a major emitting facility must demonstrate that "emissions from construction or operation of [the] facility will not cause, or contribute to, air pollution in excess of any * * * national ambient air quality standard for any pollutant in any area to which this part applies * * *." 42 U.S.C. § 7475(a)(3). See also 40 C.F.R. §52.21(k) ("The owner or operator of the proposed source * * * shall demonstrate that the allowable emissions increases from the proposed source * * * would not cause or contribute to air pollution in violation of: (1) Any national ambient air quality standard in any air quality control region * * *.").

Peabody has failed to make that showing with regard to two air quality standards: the 8-hour ozone standard, and the fine-particulate standard. That failure precludes issuance of the permit. 42 U.S.C. § 7475(a) ("No major emitting facility * * * may be constructed in any area to which this part applies" unless owner has demonstrated that facility will not result in violation of air quality standards). This issue was raised in comments. See Response, Pet. Ex. 12 #293, #294, #296, & #299 (ozone) and #351 & #352 (PM2.5).

A. Peabody has Failed to Demonstrate that the Facility Will Not Cause or Contribute to Air Pollution in Violation of the 8-Hour Ozone Standard.

Peabody's proposed facility has the potential to emit over 100 tons of volatile organic compounds per year, as well as a significant quantity of nitrogen oxides (NOx). Response, Pet. Ex. 12 at 295. Those compounds create ozone pollution. See 69 Fed. Reg. 56,697 (Sept. 22, 2004) ("Ground-level ozone (sometimes referred to as smog) is formed by the reaction of volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) in the atmosphere in the presence of sunlight."). The proposed power plant lies less than two miles from the Greater St. Louis air quality area ("St. Louis Area"). Ozone pollution in the St. Louis Area *already* exceeds national air quality standards See 69 Fed. Reg. 23,858, 23,898 (April 30, 2004) (designating area in "non-attainment" of national ozone standards). Peabody has not demonstrated – and in all likelihood, cannot demonstrate – that its facility will not "contribute" to the St. Louis area ozone pollution. Nor has it demonstrated that its emissions will not violate the ozone standards in the very area in which it will be sited. 42 U.S.C. § 7475(a)(3).

IEPA responded that the facility will not result in pollution in excess of the "1-hour" national ozone standard. That "1-hour" standard no longer applies in most of the

country; USEPA has promulgated a more stringent standard (the "8-hour" standard), permitting lower concentrations of ozone and using a longer period of measurement. See 68 Fed. Reg. 32,802, 32,804 (June 2, 2003). USEPA originally announced the 8-hour standard in 1997, based on its conclusion that exposure to even low concentrations of ozone can, if prolonged, result in both acute and chronic respiratory illness. 62 Fed. Reg. 38,856, 38,860 (July 18, 1997). In 2003, on remand following legal challenge, USEPA reaffirmed the 8-hour standard. See 68 Fed. Reg. 614 (January 6, 2003). And in April 2004, USEPA announced its classifications of areas with ozone pollution in excess of the new 8-hour standard and areas in attainment. 69 Fed. Reg. 23,858.

Simply stated, the Act demands that Peabody show that its facility will not contribute to air pollution in excess of the 8-hour ozone standard. 42 U.S.C. § 7475(a)(3) (facility may not be constructed unless owner shows that pollution will not contribute to exceedance of "any * * * national ambient air quality standard for any pollutant in *any* area to which this part applies") (emphasis added). See 68 Fed. Reg.32,802, 32,843 (June 2, 2003) ("As of the date areas are designated attainment or non-attainment under the 8-hour standard, major [new source review] will apply under the [8-hour] standard.").[28] See also Letter from Stephen Rothblatt, USEPA Region 5 to Janet McCabe, Indiana Dept. of Env. Mgmt. dated February 26, 2004 ("The nonattainment NSR requirements apply to newly designated nonattainment areas upon the effective date of the designation.") (attached as Pet. Ex. 26). This was not done. The permit should be

[28] EPA has accepted additional comments on its proposed rule implementing the 8-hour standard, and has not completed publication of its final rule. See 69 Fed. Reg. 23,951 (April 30, 2004) ("We plan to issue a second rule, Phase 2 * * * which will address the remaining 8-hour implementation issues."). The agency has not suggested, nor would the Clean Air Act permit, that new sources may be constructed without demonstrating that they will not result in a violation of the 8-hour standard.

remanded because the Act prohibits Peabody from receiving a permit until it demonstrates that it can comply with the NAAQS.

B. Peabody Has Failed to Demonstrate that the Facility Will Not Contribute to Pollution in Violation of the PM 2.5 Air Quality Standard.

Peabody's facility is, likewise, a significant source of fine particulate pollution. See Response, Pet. Ex. 12 #352. Fine particulate (PM 2.5) pollution in the Greater St. Louis area, less than two miles from the facility, currently violates national air quality standards; USEPA designated the St. Louis Area as a PM2.5 non-attainment area in December 2004. 40 C.F.R. § 81 (2005). Peabody has not demonstrated that pollution from its facility will not contribute to that pollution, or to violations of the national fine-particulate standards in areas currently designated as attaining the standard; that failure precludes issuance of the permit. 42 U.S.C. § 7475(a)(3).

IEPA offers two rationales for its contrary decision. First, it claims that USEPA has not provided it "[a]ppropriate methodology and procedures for performance of PM2.5 air quality analyses." Response, Pet. Ex. 12, #260. Even if true, that absence does not allow issuance of the permit. Peabody bears the affirmative burden of "demonstrat[ing] * * * that emissions from construction or operation of [its] facility will not cause, or contribute to, air pollution in excess of any * * * national ambient air quality standard." 42 U.S.C. § 7475(a)(3). If it cannot make that demonstration – for any reason, including the absence of an EPA-approved "methodology" – a permit cannot issue.

Second, IEPA states that it will require "post-construction monitoring relating to PM 2.5" in order to ensure compliance with the fine-particulate standards. Response, Pet. Ex. 12, #260. Put differently, IEPA intends to issue the permit before, rather than after, it determines whether emissions from the facility will contribute to air pollution in

excess of the national air quality standards. The Clean Air Act demands that showing before the permit issues. 42 U.S.C. § 7475(a)(3) ("No major emitting facility * * * may be constructed unless * * *."). "Post-construction monitoring" cannot, by definition, satisfy the Act's requirements. The failure to ensure that Peabody's proposed facility will not cause or contribute to a violation of the applicable PM2.5 NAAQS is a clear error of law. This is also a significant policy issue that the Board should review because it is at issue in many other coal plant proposals in the United States.

VII. IEPA and USEPA Failed to Take Basic Steps to Comply with Their Environmental Justice Obligations

Petitioners raised a series of environmental justice concerns in their public comments, particularly focusing on mercury deposition and urging IEPA and USEPA to prepare an environmental justice assessment prior to issuing the Peabody permit. IEPA rejected that request. Instead, IEPA, after the Board remanded the first permit, had IEPA attorney Chris Presnall prepare a memo for the file dated April 20, 2005 and entitled "Prairie State Generating Station, Washington County, Environmental Justice." Pet. Ex. 51. In this memo IEPA acknowledges that it "received several comments regarding environmental justice concerns," but summarily concludes that IEPA "more than fulfilled [its environmental justice] public involvement obligations." Id. at 1.

USEPA and IEPA violated their environmental justice obligations in three ways. First, the agencies failed to conduct an environmental justice assessment. Such an assessment would reasonably include a number of large existing sources of air pollution, as well as a number of new sources, including the recently-approved Holcim Cement plant that is billed as the largest cement plant in North America. USEPA is currently conducting an environmental justice assessment as part of its permitting decision for the

Onyx hazardous waste incinerator that is focusing, in part, on the issue of mercury exposure among subsistence anglers in East St. Louis. Given the close proximity, Peabody's mercury emissions threaten to increase that existing mercury problem. IEPA downplays the significance of USEPA's existing environmental justice assessment work in East St. Louis because it is over thirty miles from the site of Peabody's proposed facility. Pet. Ex. 12, #341. Curiously, IEPA does not explain how the US Fish and Wildlife Service can find that Peabody's project will adversely impact visibility in the Mingo National Wildlife Refuge, which is located approximately 135 miles away, yet residents living thirty miles from the facility are unaffected.

Second, the agencies failed to ensure meaningful public participation by the environmental justice communities in and around East St. Louis, and others that an environmental justice assessment might identify. A long acknowledged principle of environmental justice, meaningful public participation requires much more than holding a hearing and extending the comment period. For example, IEPA's Draft Environmental Justice Policy states:

> 'Environmental Justice' is based on the principle that all people should be protected from environmental pollution and have the right to a clean and healthy environment. Environmental justice is the protection of the health of the people of Illinois and its environment, equity in the administration of the State's environmental programs, and 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."

www.epa.state.il.us/environmental-justice/policy.html (emphasis added). In other words, meaningful public involvement requires the agencies to actively involve the affected members of the public. Without early, active and affirmative support, affected communities have less opportunity to consider potential environmental implications of

permitting decisions, to get involved in decisions affecting their health, and to suggest possible mitigation measures as necessary.

Third, IEPA used a mapping tool that is illogical in this situation. IEPA used USEPA's EJ Geographic Tool ("EJ GAT"), a tool that is useful in some applications but limited in this instance because its maximum radius for an analysis is ten miles. Pet. Ex. 51. The impact of Peabody's pollution extends far beyond ten miles. Indeed the PSD air modeling found that the Significant Impact Level area, or the radius of air quality impacts for the proposed project, is at least 50 km — more than three times the ten-mile radius that the EJ GAT tool can consider. It is unreasonable for IEPA to reject Petitioners' concerns about low-income and minority residents in East St. Louis when the record clearly demonstrates that Peabody's air pollution will extend far beyond the ten miles IEPA considered. The Board should remand the permit for failure to meet the letter and spirit of the agencies' environmental justice obligations and the overarching CAA policy requiring an informed public decision-making process. On remand IEPA and USEPA should be required to complete an environmental justice assessment, to consider the assessment's findings, and to solicit meaningful public input in potential environmental justice matters.

VIII. IEPA's Safety Factor Not Documented in the Record

IEPA's response to comments also claims that IEPA has the discretion to set a limit that incorporates a factor of safety rather than a limit corresponding to the maximum control achievable. For example:

- IEPA rejected lower PM/PM10 emission rates based on stack tests provided by Petitioners and included in PSGS's BACT Summary Table because they did not include a safety factor. Response, Pet. Ex. 12 #158, 162, 167.

- IEPA rejected lower filterable PM/PM10 limits, asserting that a higher safety factor must be used for PM/PM10 than for SO2 or NOx. Id. #158.
- IEPA set a 98 percent BACT SO2 control efficiency on annual basis, rather than a 30-day basis, to build in a safety factor. Id. #99-100, 110.
- IEPA rejected higher SO2 control efficiencies documented in the record to include an adequate factor of safety. Id. #114.
- IEPA rejected lower NOx emission rates achieved by operating plants demonstrated by continuous emission monitoring data, arguing that the limited amount of data justifies a safety factor. Id. #132, 133, 137.
- IEPA asserted that coal quality issues dictate a factor of safety. Id. #139.
- IEPA asserted that it applied appropriate safety factors to emission rates achieved in practice to set BACT limits. Id. #230.

IEPA has not defined "safety factor" nor explained its method of calculating an appropriate safety factor. Assuming that a safety factor is permitted under BACT, neither the public nor USEPA can assess whether the safety factors IEPA included are appropriate. The Board has previously held that an agency has discretion to base an emission limitation on a control efficiency that is "somewhat lower than the optimal level," but only under certain limited conditions. In re Masonite, 5 E.A.D. 551, 560 (EAB 1994). These conditions include: (1) where there is little experience with application of the technology to that type of facility; (2) the control efficiency is known to fluctuate; (3) past decisions involved different source types; and (4) the permit requires tests to be performed to determine optimum operating conditions for technology, which then has to be followed. Without complying with these narrowly drawn exceptions, granting a safety factor excuses a source from the CAA's requirement to achieve the maximum degree of reduction achievable. The record contains no evidence that Peabody qualifies for a "safety factor" under these criteria.

A. Safety Factor For 98% SO2 Control

The permit contains a BACT limit that requires 98 percent SO2 control on a 12-month rolling average basis. Revised Permit, Pet. Ex. 1, Condition 2.1.2.b.ii.B. IEPA states that this limit provides a "safety margin" of about 10 percent to accommodate variability in performance from year to year based on USFWS SO2 control efficiency data for the Harrison Plant (98.2% – 98.3%). IEPA 4/27/05 Memo, Pet. Ex. 43 at 10. Elsewhere, discussing Carmeuse data that supports 98.4 percent SO2 control, IEPA states that its 98 percent limit provides a 20 percent safety factor. Pet. Ex. 12 #100. These claims are technically and legally erroneous for several reasons.

IEPA incorrectly applies a safety factor to eliminate higher control efficiencies and avoid setting lower emission rates. BACT is determined without regard to safety factors except in extraordinary circumstances. Even if a permitting agency grants a safety factor–relying on one or more of the Masonite factors--that excursion from BACT must be confined to the minimum safety factor necessary to address the relevant Masonite factor. Absent the finding of necessity for a safety factor, the presumption should be compliance with the CAA's strict BACT requirements.

Moreover, the limit itself is expressed as a 12-month rolling average. Long averaging periods are, by construct, a safety factor that allows upsets to be minimized by long periods of emissions slightly below the permit limits. USFWS data, for example, indicates that an annual average limit builds in a safety factor of 2:1, compared to a daily average. IEPA 4/27/05 Memo, Pet. Ex. 43 at 10. In this case, IEPA fails to show that any safety factor is justified, especially in light of a generous 12-month averaging period.

B. NOx Safety Factors

IEPA rejected lower NOx limits that had been permitted or achieved at other facilities because the other sources were not afforded a safety factor. Pet. Ex. 12, #132, 133, 137, 139; IEPA 4/27/05 Memo, Pet. Ex. 43 at 8. IEPA does not identify the safety factor(s) that it used to screen and evaluate this NOx data. IEPA's rationale is clearly erroneous. The fact that other sources achieve lower NOx emissions without a safety factor counsels against a safety factor, not in favor of one. Even if a safety factor is warranted, IEPA fails to demonstrate why a very large safety factor – in the neighborhood of 400 percent – is warranted.[29] Furthermore, the record lacks any evidence that Peabody needs a safety factor as required by Masonite or that IEPA even considered such factors.

Moreover, as with the SO2 limit, IEPA provides a very long NOx averaging time. This provides an inherent safety factor by allowing the source to average out high emission periods during any twelve-month period. IEPA fails to provide any basis for granting this safety factor. The permit should be remanded to IEPA to analyze whether Peabody does, in fact, qualify for a safety factor. This is an important policy issue because absent careful policing of this "safety factor" issue the goal of BACT will be undermined by indiscriminate grants of generous safety factors that water down the technology-forcing and maximum reduction requirements of the Act.

[29] IEPA set a 30-day NOx limit of 0.07 lb/MMBtu. IEPA rejected candidate BACT emission rates of 0.015 lb/MMBtu based on a 3-hour (Pet. Ex. 12 #132, 133) and 0.049 lb/MMBtu based on a 30-day average (Id. at #137; Dr. Fox Comment II., Pet. Ex. 9 at C.2, Table 1) due to alleged inadequate margins of safety. These rejected NOx emission rates correspond to safety factors of over 470 percent (0.07/0.015) and 1.42 or 42 percent (0.07/0.049), respectively.

C. PM/PM10 Safety Factors

IEPA rejected lower PM/PM10 limits that had been permitted or achieved at other facilities because those limits allegedly did not incorporate a safety factor. Response, Pet. Ex. 12, #158, 162, 167, 137, 139; IEPA 4/27/05 Memo, Pet. Ex. 43 at 12. The record contains no evidence that the IEPA addressed the four factors that Masonite requires to justify the use of a safety factor. Nor does IEPA justify the safety factor.

The PM safety factor by IEPA is excessive under any standard. Petitioners provided source tests from power plants in Georgia and Florida that document filterable PM/PM10 emissions rates as low as 0.003 lb/MMBtu.[30] Response, Pet. Ex. #164; Dr. Fox Comments, Pet. Ex. 5 at IV.B.2. However, IEPA rejected these other limits in favor of a PM/PM10 limit of 0.015 lb/MMBtu, i.e. a safety factor of 500 percent (0.015/0.003).[31] Even assuming that IEPA documented a basis for granting a safety factor, a 500 percent safety factor far exceeds the narrowly drawn "somewhat lower than the optimal level" safety factor envisioned by the Board in Masonite, 5 E.A.D. at 560 (emphasis added).

IEPA also states that "significantly larger" safety factors for PM are justified as "a consequence of the nature of particulate control systems * * * ." Pet. Ex. 12, #158. IEPA provides no explanation for this bizarre premise. The "nature" of an electrostatic

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[30] IEPA dismisses other stack test data, in addition to that presented by Petitioners, on the basis that the PM test results are highly variable for a given unit. IEPA provides no evidence in support of this obvious excursion from the top-down process and its presumption that pollution limits achieved at one source are achievable at similar sources. In the absence of documented facts Petitioners cannot determine if the high and variable results claimed by IEPA are due to changes in test methods (e.g., Method 5 v. 201 v. 5/201 plus 202 or sample treatment methods), were conducted under unusual conditions (e.g., soot blowing, sometimes tested in Florida), or were in some other way anomalous (e.g., changes in fuel, operating modes, or control equipment).

[31] IEPA argues that higher safety factors are required for PM/PM10 than SO2 and NOx because of the high degree of control required and the use of short term testing. Response, Pet. Ex. #158. Again, there is no support for this claim. Electrostatic precipitators have a longer track record on coal-fired power plants than any other pollution controls, dating back many decades. Further, they are routinely designed to achieve 99.99% plus particulate reduction.

precipitator is that it can provide a reliable and demonstrated control device capable of achieving a consistently high degree of pollution control. A safety factor is simply unnecessary and, in this case, wholly unjustified.

IEPA also proffers that a "significantly larger" safety factor for PM is justified due to the "very high levels of control that must be achieved." Pet. Ex. 12 #158. This is a self-defeating concept. IEPA is saying that as BACT limits become more stringent, a safety factor is increasingly necessary to avoid more stringent levels. Under this approach BACT would cease to be a technology-forcing provision. The Board should remand the permit to IEPA with instructions that it must justify the need for a PM/PM10 safety factor, as well as the specific safety factor granted, if any.

IX. IEPA Committed Clear Error When It Rejected Coal Washing

Petitioners, United Mineworkers of America (Pet. Ex. 50), and the USFWS (Pet. Ex. 52) submitted comments on the draft Peabody permit urging IEPA to require coal washing. Despite the long history of washing to coal to reduce overall air pollution emissions, the revised permit does not require coal washing. IEPA's explanation of why it did not require coal washing is rife with factual and legal errors. The coal washing issue in this Peabody proceeding is also at issue in many other cases. Petitioners urge the Board to review this important nationwide policy issue.

A. The Use Of Washed Offsite Coals Was Not Factored Into the BACT Limits

In August 2004, at the close of the permit comment period, Peabody requested that its final permit authorize the burning of washed coal from other coal mines. See Tickner Letter, Pet. Ex. 16. IEPA's January permit granted this request. See In re Prairie State, Appeal No. 05-02, Exhibit 1, Condition 1.3. In the revised permit at issue in this

proceeding IEPA removed the earlier authorization and replaced it with a condition that allows the use of washed Illinois coal from offsite sources during "extended interruption in the mine-mouth coal supply." Pet. Ex. 1, Condition 1.3.a.ii.

This new condition is ambiguous and does not meet the BACT requirements. For example, this condition does not limit the length of any interruptions. This condition could be used by Peabody to justify an alternate coal supply for the life of the facility, all without a valid BACT analysis for such offsite coal. Washed coal could, of course, potentially allow lower SO2, NOx, and PM10 emission and justify lower BACT limits.

The permit condition allows interruptions "caused by events or circumstances that could not have been reasonably prevented by the Permittee, its contractors, or any entity controlled by the Permittee." Id. This is unnecessarily broad. Peabody could use this clause to gain advantage in labor negotiations or to gain a business advantage in the market place, events that do not warrant exceptions from compliance with a PSD permit. For these reasons the Board should remand the permit to IEPA with instructions to limit the length of the interruption when Peabody can burn offsite coal, to limit the types of interruptions when offsite coal can be used, such as industrial accidents or acts of God, and to include separate BACT emission limits for periods when washed coal is used.

B. Unusual Circumstances Were Not Documented

Petitioners and others commented that coal washing could not be eliminated as BACT unless "unusual circumstances" were documented because about 80 percent of eastern bituminous coal is currently washed. Response, Pet. Ex. 12 #61-63; Dr Fox Comments, Pet. Ex. 5 at 11. IEPA makes a three-part response: (1) the "unusual" policy is not clear; (2) there is no obligation to evaluate impacts at other plants; and (3) there are unusual circumstances facing Peabody.

1. The "Unusual Circumstances" Requirement Is Not Ambiguous

First, IEPA argues that USEPA guidance is not "clear" as to "unusual circumstances" when the most effective control option has been selected. Response, Pet. Ex. 12, #61. This is clear error. The USFWS in its comments noted that

> if a procedure is broadly utilized by industry (as coal washing is for over three quarters of coal produced in the eastern United States), then it is inappropriate to eliminate it for any given project based upon economic reasons. PSGS should demonstrate why its project is significantly different in scope or why the costs for washing coal at this facility would be different from the typical costs born by the coal-fired electric utility industry.

Hoffman Letter, Pet. Ex. 10 at 11. Moreover, for widely used control technologies, such as coal washing

> [t]he determination that a control alternative is inappropriate involves a demonstration that circumstances exist at the source which distinguish it from other sources where the control alternative may have been required previously, or that argue against the transfer of technology or application of new technology * * * In showing unusual circumstances, objective factors dealing with the control technology and its application should be the focus of the consideration. The specifics of the situation will determine to what extent an appropriate demonstration has been made regarding the elimination of the more effective alternative(s) as BACT. In the absence of unusual circumstance, the presumption is that sources within the same category are similar in nature, and that cost and other impacts that have been borne by one source of a given source category may be borne by another source of the same source category.

NSR Manual at B.29; see also In re Kawaihae Cogeneration Project, 7 E.A.D at 107, 117, n. 12 (EAB 1997) (quoting this language). If a control technology is widely used, the bar is very high for eliminating it as not cost effective, in the absence of unusual circumstances. IEPA has not identified any unusual circumstances to reject coal washing.

2. The Applicant Must Evaluate Impacts at Other Plants

Second, IEPA claims that Peabody is not required to evaluate impacts that occur at other plants. Response, Pet. Ex.12, #62. This is contrary to the plain language of the NSR Manual: To reject a widely used control an applicant must demonstrate that costs

are disproportionately high "compared to the cost of control for the pollutant in recent BACT determination. Specifically, the applicant should document that the cost to the applicant of the control alternative is significantly beyond the range of recent costs normally associated with for the type of facility * * *." NSR Manual at B.45.

The record does not include any comparative cost data, except data produced by Petitioners, which IEPA rejected. See, e.g., Dr. Fox Comments, Pet. Ex. 4 (Ex. 23). IEPA's failure to consider the costs borne by other applicants for similar facilities is clear legal error because it is impossible to demonstrate disproportionately high costs without identifying the costs incurred at other facilities.

3. There Are No Unusual Circumstances

IEPA assert there are "unusual circumstances" present in this case, including a high efficiency scrubber, new laws governing wastewater from coal washing facilities, and concerns over risks posed by wastewater and solids from coal washing facilities. Response, Pet. Ex. 12, #61. The use of a high efficiency scrubber does not affect IEPA's obligation to identify and evaluate the emission limit that corresponds to "the maximum degree of reduction" achievable regardless of how many control systems might be required. Combinations of pollution control technologies are routinely evaluated in BACT analyses. There are several new proposed coal-fired power plants that propose to burn both low-sulfur coal and install scrubbers. See SO2 BACT discussion above. Moreover, Peabody's BACT determination for NOx concluded that two technologies were appropriate, low NOx burners and SCR. Permit, Pet. Ex. 1, Cond. 2.1.2.a.ii&iii.

Likewise, the requirement to comply with new regulations and alleged risks posed by solids and wastewaters do not constitute unusual circumstances. All coal washing facilities must comply with nationwide regulations. IEPA indicates that existing coal

plants are complying with these regulations by installing close-circuit, non-discharging water systems. Response, Pet. Ex. 12 #97. IEPA does not explain, however, why it would be "unusual" for Peabody to comply with the same regulations.

C. Alleged Energy, Environmental and Economic Impacts Are Erroneous and Otherwise Similar to Those Borne by Other Applicants

IEPA claims that coal washing was eliminated in part due to adverse environmental impacts. Response, Pet. Ex. 12, #106. However, as discussed below, these impacts are not unusual compared to those occurring at other, similar plants.

First, Peabody claims coal washing requires 27 million gallons of water per year. PSGS PSD Application, Table J.5-1. However, this is unlikely because as IEPA explains, existing regulations do not allow point source discharges. Response, Pet. Ex. 12, #97. Coal washing plants run as zero discharge systems and recycle water. Very little makeup water is required. Stringent sulfate and chloride discharge standards in Illinois have resulted in the conversion of existing facilities to closed-circuit, non-discharge systems. Id. This means water is recycled, minimizing demand. A new plant would not be built that did not comply with this law.

Second, Peabody claims that coal washing produces a large amount of waste, gob and slurry, which require large amounts of land for disposal. Response, Pet. Ex. 12 #67. Wash plants routinely use thickeners and belt presses to remove water from the fine material and thus they have no slurry discharge. Peabody's Riola wash plant indicates that the waste is mostly rock and fine clay that requires far less land for disposal. United Mineworker Comments, Pet. Ex. 50 at 23, item (8).

Third, Peabody suggests that wash plants would create "a perpetual care disposal site." Application at J-6. The Surface Mining Reclamation and Control Act regulates

these wastes and includes procedures for restoring and reclaiming gob piles and slurry ponds. Thus, "perpetual case" facilities are not likely unless a facility disregards the law. United Mineworker Comments, Pet. Ex. 50 at 23, item (8).

Regardless, the NSR Manual explains that "the fact that a control device creates liquid and solid waste that must be disposed of does not necessarily argue against selection of that technology as BACT, particularly if the control device has been applied to similar facilities elsewhere and the solid or liquid waste problem under review is similar to those other applications." NSR Manual at B.47. In sum, Peabody has not documented any environmental factors that are unusual to this facility .

D. The Coal Washing Cost Analysis Is Erroneous

IEPA rejected coal washing in part on economic grounds. Response, Pet. Ex.12 #106; IEPA 4/28/05 Evaluation of Coal Washing ("IEPA Coal Washing Analysis"), attached as Pet. Ex. 53. IEPA's argument suffers from a major weakness: it did not consider the benefits of reducing other pollutants beyond SO2.

IEPA's coal washing analysis did not consider other pollutants that are removed including ash (which becomes PM10), hazardous air pollutants, and NOx. Response, Pet. Ex. 12, #64-65. Obviously, adding this additional benefit into the cost-effectiveness analyses would better document the benefits of coal washing.

IEPA alleges, with no supporting data, that "significant reductions in emissions of these other pollutants cannot be assumed to result from use of coal washing." Response, Pet. Ex. 12, #64. However, the record refutes this claim. About 80 percent of the ash becomes particulate matter emissions. The as-received coal contains about 24 percent

ash.[32] Washed coal contains 6.79 percent ash. PSGS PSD Application, Appx. J, Attach. J-1, Table 6, p. 12. Thus, coal washing could remove up to one million tons per year of particulate matter,[33] in addition to the estimated 179,389 tons of SO2. Id. at Table J.6-2. The benefits of coal washing must consider these benefits, as well as reductions in mercury and nitrogen oxides. Thus, an accurate "apples to apples" comparison must consider the mercury, PM, and NOx reductions, in addition to the SO_2 reductions, versus the cost of achieving these reductions. Calculating cost effectiveness based only on SO_2, and ignoring the PM, mercury and possibly NOx that is removed is unreasonable. See generally In re Foster Wheeler Passaic, PSD Appeal No. 89-1, 1989 EPA App. LEXIS 27 (EAB May 26, 1989) (failure to consider all of the tons of pollution possibly removed in economic analysis may be grounds for remand).

X. IEPA Did Not Require BACT for Sulfur Dioxide (SO2)

The final permit sets a two-part BACT limit for SO2: (1) an emission rate of 0.182 lb/MMBtu based on a 30-day average and, (2) a control efficiency of 98 percent based on an annual average. Permit, Pet. Ex. 1, Condition 2.1.2.b.ii. The emission rate of 0.182 lb/MMBtu was calculated assuming 98 percent control based on the sulfur content of the design coal, 9.1 lb SO2/MMBtu. Response, Pet. Ex. 12 #107; IEPA 4/27/05 Memo at 10. The permit condition requiring 98 percent control efficiency was added for the first time in the final permit and thus is ripe for comment in this Petition. This two-part limit is not BACT for the reasons set forth below.

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[32] Prairie State Energy Campus, Design Coal, Typical Analysis, Revision 1, October 29, 2002.

[33] The amount of particulate matter that would be removed by washing the coal: (0.80)[(7,433,030 ton/yr of coal)(0.24 – 0.0679)] = 1,023,380 tons of particulate matter per year. The amount of coal that is burned each year is based on the Permit, finding 1b: (2 boilers)[(7,450 MMBtu/hr)(8760 hr/yr)(10^6)]/)[(8780 Btu/lb)(2000 lb/ton)] = 7,433,030 ton/yr.

A. IEPA Failed to Consider All Available Control Technologies in Its SO2 BACT Analysis

Petitioners commented that the SO2 BACT analysis did not consider all available SO2 control technologies. Petitioners specifically identified three technologies that could achieve low SO2 emissions at Peabody's proposed facility which IEPA failed to evaluate in the BACT analysis: (1) magnesium-enhanced lime scrubbers, (2) the Chiyoda CT-121 bubbling jet reactor, and (3) specified scrubber design enhancements. Response, Pet. Ex. 12 #103; Dr. Fox Comments, Pet. Ex. 5 at III.B.

IEPA failed to evaluate or even consider these technologies. IEPA asserts that "the distinctions between different types of scrubber designs * * * are not relevant for the purposes of the BACT determination." Response, Pet. Ex. 12, #103. This is clearly erroneous for at least four reasons.

First, BACT means an emission limit achieved through the application of "production processes or available methods, systems and techniques * * *." 40 C.F.R. § 52.21(b)(12). These various types of scrubbers are distinguishable "methods, systems and techniques" within the plain definition of these terms. It is plainly arbitrary for IEPA, as it did, to only consider a generic scrubber—in this case a low-efficiency scrubber—to comply with the requirement to evaluate all control options. See NSR Manual at B-5. IEPA offers no reasoned basis for this decision.

The vendor of one of these technologies, magnesium-enhanced lime ("MEL"), commented that the Peabody BACT analysis had incorrectly lumped together lime, magnesium-enhanced lime and limestone-based scrubber systems and noted:

> Wet FGD systems that use magnesium-enhanced lime achieve higher SO2 removal efficiencies than systems that use limestone [selected for PSGS]. Moreover, MEL wet FGD is a distinct FGD technology from limestone wet FGD and should have been listed as a separate SO2 control option in Table C.6.2.-1.

> For example, a recent BACT analysis for the Elm Road Generating Station in Wisconsin listed lime-based wet FGD as a separate technology option [] and included a separate technology analysis for lime-based wet FGD.

Letter from Lewis Benson, FGD Technical Manager, Carmeuse Natural Chemicals to Shashi Shah, IEPA, dated April 20, 2004 (attached as Pet. Ex. 28) at 2. Presumably the vendor of the MEL process knows whether it sells a distinguishable technology. IEPA did not address Carmeuse's comment that MEL is a distinct technology deserved of a separate evaluation. Instead, IEPA repeated the unsupported claim in the applicant's BACT analysis that the distinctions between the various scrubber designs are not relevant. Pet. Ex. 12, #103.

These technologies should have been the basis for BACT unless eliminated on the basis of energy, economic, or environmental grounds. "All available control techniques must be considered in the BACT analysis." NSR Manual at B.16. A remand is generally appropriate when an agency fails to examine the feasibility of a more effective control technology. IEPA's act of rejecting top-ranked control options, without analyzing them in a top-down BACT analysis, is clear error.

B. Higher SO2 Control Efficiencies Are Achievable

Petitioners and others, including the U.S. Department of the Interior, commented that BACT for SO2 should be based on a control efficiency greater than 98 percent. Response, Pet. Ex. 12 #100, 103, 104, 106, 110-112, 114, 115, 123. The US EPA also recently concluded that "[a]nnual SO2 removal efficiencies have been demonstrated above 98 percent." 70 FR 9706, 9711 (Feb. 28, 2005). These comments individually, and collectively, present substantial evidence that a higher control efficiency than 98 percent is achievable for Peabody's proposed facility.

IEPA responded that "99 percent removal is considered a theoretical limit" and "clearly would not provide the safety factor for compliance that is appropriate for a BACT limit." Pet. Ex. 12, #110. IEPA presents no evidence that 99 percent control is theoretical in the face of the substantial evidence to the contrary presented in comments. See Pennsauken County, 2 E.A.D. at 672 (The Board remands a permit because the "applicant's assertions that the technology has not yet been demonstrated to be efficient, reliable, and cost effective in controlling NOx are merely conclusory."). IEPA's conclusion ignores that fact that USEPA identified three coal-fired power plants that were guaranteed to meet 99% SO_2 control in 1972.[34]

Further, any claim that 99 percent control would provide no safety factor is wrong. Peabody's proposed facility is capable of achieving 99.76 percent SO2 control. Pet. Ex. 9. Assuming for the moment that IEPA's safety factor of 25 percent is appropriate, Peabody could comply with a 0.0273 lb/MMBtu limit, based on a 99.7 percent SO2 control.[35] Similarly, the permit limit corresponding to an achieved efficiency of 99 percent would be 0.114 lb/MMBtu, based on 98.75 percent SO2 control. Peabody's permit limit is set significantly higher: 0.187 lb/MMBtu.

IEPA failed to provide any documented basis for rejecting these higher control efficiencies (>98%). See NSR Manual at B.8-B.9 ("In the event that the top candidate is shown to be inappropriate, due to energy, environmental, or economic impacts, the rationale for this finding need to be fully documented for the public record.).

[34] 37 Fed. Reg. 5,768, Table 1 (Mar. 21, 1972).
[35] The Mitchell unit achieved 99.76% SO2 control efficiency. Pet. Ex. 9. A permit limit based on 99.7% would include a 25% safety factor: (100 – 1.25[100-99.76]) = 99.7%. The corresponding emission limit would be (9.1 lb SO2/MMBtu)(100-99.7)/100 = 0.0273 lb/MMBtu.

1. Mitchell SO2 Performance Data

Carmeuse also commented that MEL could achieve greater than 98 percent SO2 removal. Carmeuse Comments, Pet. Ex. 28 at 1. Petitioners obtained from Carmeuse four months of continuous, hourly SO2 data for the Mitchell facility, a facility designed by Carmeuse. This data shows that Mitchell consistently achieves greater than 98 percent SO2 control. Pet. Ex. 12 #115; Dr. Fox Comments II, Pet. Ex. 9. IEPA dismissed this data. Pet. Ex. 12 #115.

IEPA asserts that "historical data does not provide an adequate basis to set a limit" but does not explain why specifically 18 months of hourly data is not an adequate basis for setting a limit. Pet. Ex. 12 #115. As discussed above, IEPA previously stated that historical data is necessary to establish BACT based on demonstrated emission rates. Now IEPA claims that even demonstrated emission rates are insufficient. In short, it is frustratingly unclear what information IEPA will consider in a top-down BACT analysis that does not originate from the applicant.

Petitioners are aware of no authority for IEPA to eliminate the top technology alternative because it is demonstrated on a full scale commercial application for 18 months under a Consent Decree. In fact, the opposite is true. The NSR Manual is clear that technologies with demonstrated potential to achieve the highest level of control must be evaluated. An option can only be eliminated "based on physical, chemical, and engineering principles." Id. At B.7. If demonstration projects were eliminated from the universe of sources one considers, technology would not advance, undercutting the technology-forcing nature of BACT. The 18-month demonstration proved that an SO2 emission limit of 0.009 lb/MMBtu daily average and a control efficiency of 99.76 percent

was achievable. IEPA can only eliminate this top-ranked option if it provides a reasoned analysis, i.e. more than mere conclusions. Pennsauken County, 2 E.A.D. at 672.

IEPA seeks to attack Mitchell's prior performance by pointing to its existing emission rate of 0.166 lb/MMBtu of SO2, a rate which is higher than the emissions data provided by Petitioners and corresponds to a control efficiency of only 97 to 98 percent. Pet. Ex. 12 #115. This is irrelevant. Power stations seek to minimize costs. Once the Consent Decree expired, Mitchell had no obligation to operate its scrubber at 99 plus percent SO2 control. IEPA does not dispute that this prior level of control was demonstrated to be feasible. Even if Mitchell is not operating its scrubber at full capacity because it no longer is required to, its historic performance demonstrates that higher levels of SO2 control are achievable. Moreover, even now that Mitchell's scrubbers are not operating at full capacity its SO2 emission rate is still lower than the limit IEPA established for Peabody.

2. Longview Permit Limit

Commenters noted that the SO2 permit limit for the Longview, West Virginia facility, 0.095 lb/MMBtu annual average, is lower than the proposed Prairie State SO2 limit of 0.182 lb/MMBtu. IEPA erroneously responded that the Longview SO2 limit corresponds to 97.625 percent SO2 control, lower than Prairie State's. Pet Ex. 12, #122. IEPA calculated Longview's efficiency based on its average fuel sulfur content and the Peabody efficiency is based on the design (maximum) sulfur content.[36] Pet. Ex. 5, at 24; IEPA 4/27/05 Memo, Pet. Ex. 43 at 10 (the SO2 limit "is based on achieving 98% control of sulfur present in the design coal supply for the boilers."). Dr. Fox participated in

[36] Prairie State Energy Campus, Design Coal, Typical Analysis, Raw Basis, Seam 6, Report Data 6/24/2001, Revision 1, October 29, 2002. Design sulfur content is 9.1 lb/MMBtu. Thus, the percent SO2 control is [1-0.182/9.1]100 = 98%.

negotiating the Consent Order that set the SO2 emission limit for Longview at 0.095 lb/MMBtu. She was advised by the applicant that the sulfur content that IEPA used for Longview[37] is an average, not a design value. The Longview SO2 permit limit is based on 98.7 percent SO2 control, which corresponds to a 98.96 percent achieved control efficiency with a factor of safety of 25 percent.

3. Bubbling Jet Reactor

Petitioner commented that the Chiyoda CT-121 bubbling jet reactor has consistently achieved greater than 99 percent SO2 control, citing a technical article that reported supporting test data. Pet. Ex. 9, Sec. III.B.1, p. 21, note 38; and Pet. Ex. 44.[38] The Chiyoda CT-121 bubbling jet reactor has been in commercial operation since 1978 and is currently in use on 33 facilities,[39] including three coal-fired boilers guaranteed to achieve 99% SO_2 removal.[40] In addition, the technology has been demonstrated in the U.S. at Plant Yates in Georgia in 1994, which continues to use the process. The Chiyoda CT-121 is commercially available and is being bid for use on coal-fired power plants in the U.S.[41]

IEPA did not respond to Petitioner's comment on the removal efficiency of the Chiyoda process. Instead, IEPA repeated its mantra that "99 percent removal is considered a theoretical limit" (Pet. Ex. 12, #110). The Chiyoda data is not "theoretical." It is hard data. Pet. Ex. 44.

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[37] West Virginia Department of Environmental Protection, Addendum to the Preliminary Determination/Fact Sheet, Longview Power, LLC, Permit Number R14-0024, December 4, 2004 (http://www.dep.state.wv.us/Docs/4660_Longview-Addendum-Ed1.pdf).
[38] Commercial Experience of CT-121 FGD Plant for 700 MW Electric Power Plant.
[39] Flue Gas Desulphurization Reference List, CT-121, http://www.bwe.dk/pdf/ref-11%20FGD.pdf.
[40] http://www.bwe.dk/pdf/ref-11%20FGD.pdf.
[41] Utility Fax Alert, July 16, 2004.

C. SO2 BACT Analysis Improperly Combined SO2 and Sulfuric Acid Mist

Petitioners commented that the SO2 BACT analysis considered SO2 and sulfuric acid mist ("SAM") together, as a single pollutant, rather than separately, as required by the definition of BACT. Response, Pet. Ex. 12 #102; Dr. Fox Comments, Pet. Ex. 5 at III.A. IEPA responded that the "nature and relationship between emissions of SO2 and sulfuric acid mist are such that the BACT analysis was properly performed," explained the relationship between SO2 and SAM, and separately discussed each pollutant, after the fact. Response, Pet. Ex. 12 #102.

The CAA does not support IEPA's "surrogate" approach in a BACT top-down process. BACT requires a separate determination "for each pollutant." 40 C.F.R. § 52.21(b)(12). The PSD regulations also set separate significance threshold for each pollutant. 40 C.F.R. § 52.21(b)(23)(i). The record does not contain a separate BACT analysis (containing, for example, the information in the NSR Manual, Tables B-2 and B-3) for SO2 and SAM. IEPA admits that it combined the two pollutants into one BACT analysis. This is clear error.

D. The Permit Does Not Include SO2 BACT Emission Limits Based on Appropriate Averaging Times

The permit sets a BACT emission limit for SO2 based on a 30-day rolling average because this is the "format used by USEPA in the NSPS and by many other states in setting BACT for coal-fired utility boilers." IEPA 4/27/05 Memo at 10. This does not satisfy BACT. BACT limits must "demonstrate protection of short term ambient standards." NSR Manual at B.56.

Ambient air quality standards and Class I and II increments exist for 3-hour, 24-hour and annual averaging times for SO2. The U.S. Department of the Interior

commented that BACT emission limits should be established in accordance with the standards, increments, and appropriate visibility threshold and that the PSD permit should include enforceable permit conditions to ensure that these emissions are limited to those used as model inputs. Hoffman Letter, Pet. Ex. 10 at 7.

The permit does not set a BACT limit for the 3-hour, 24-hour or annual SO2 NAAQS. Instead, the permit sets BACT limits for SO2 based on a 30-day average. IEPA 4/27/05 Memo at 5 and Attach.1, Pet. Ex. 43. This averaging time does not correspond to any NAAQS or increments. Thus, the permit does not assure that the project's emissions would not violate SO2 NAAQS and increments.

E. The Permit Does Not Establish a 3-Hour SO2 BACT Limit

The final permit does not contain any limit on 3-hour SO2 emissions. The permit should have established a 3-hour BACT limit that assures protection of the 3-hour SO2 NAAQS. This is an important omission because Peabody's 24-hour average SO2 emissions are high enough to contribute to a violation of the 3-hour SO2 NAAQS, in violation of PSD requirement. IEPA 4/27/05 Memo, Pet. Ex. 43 at 17-18 and Table C. This is clear legal error. The permit should be remanded to require a 3-hour BACT emission limit that assures compliance with the 3-hour SO2 NAAQS and increment.

F. The 24-Hour SO2 Limit Allows Excessive Variability

The permit contains a 24-hour limit that is equivalent to 0.329 lb/MMBtu.[42] Thus, the 24-hour SO2 limit is 1.8 times higher than the 30-day limit (0.182 lb/MMBtu). The IEPA claims that the 24-hour limit was set based on "Prairie State's judgment of what is to account for day-to-day variability in the performance of the control measures

[42] The permit includes a 24-hour emission limit for SO2 of 2,450 lb/MMBtu. This is equivalent to 0.329 lb/MMBtu, assuming operation at full load (2450/7450). Permit, Condition 2.1.7.a.ii.

for SO2 and NOx, considering the nature of those control measures." IEPA 4/27/05 Memo at 2. The adjustment allows an increase in SO2 emissions from 0.182 lb/MMBtu based on a 30-day average to 0.328 lb/MMBtu based on a 24-hour average, or a factor of 1.8 increase. This is not a valid basis for establishing a BACT limit because it is admittedly not based on a reasoned top-down analysis. The basis of "Prairie State's judgment" is not in the record.

G. Practice in Other States Does Not Replace the Obligation to Determine Short Term Limits Based on a BACT Analysis

The IEPA also justifies setting BACT based on a 30-day rolling average because this is consistent with the format used by "many other states in setting BACT for coal-fired utility boilers." IEPA 4/27/05 at 10. The practice in other states is not a valid basis for eliminating a higher BACT emissions level.

Moreover, IEPA reasoning cuts both ways. Some states have established BACT limits based on a 3-hour or 24-hour basis. See e.g. USFWS Coal-Fired Boiler Survey, attached to the IEPA 4/27/05 Memo at Attach. 2.5 (Pet. Ex. 43). For example, West Virginia established a 3-hour SO2 limit for Longview of 0.10 lb/MMBtu, based on a 3-hour average. This limit is lower than Prairie State's 24-hour limit for a similar coal.[43] Wyoming set a 3-hour SO2 limit for Wygen II at 0.15 lb/MMBtu.[44] As discussed below, these shorter averaging times are more stringent than the 30-day averaging time proposed for Prairie State.

[43] West Virginia Department of Environmental Protection, Permit to Construct, Longview Power, Permit No. R14-0024, March 2, 2004, modified by Consent Agreement July 2005 (http://www.dep.state.wv.us/item.cfm?ssid=8).
[44] Wyoming Department of Environmental Quality, Wygen 2, Permit CT-3030, September 25, 2002.

H. Averaging Times Must Be Consistent With Compliance Methods

The NSR Manual indicates that the averaging time should be "consistent with established reference methods." NSR Manual at B. 56. The averaging time for the reference method for SO2, Method 19, is about 3 hours, i.e., the duration of the test. 40 CFR 60, Subpart A, Method 19. Further, CEMS are used for SO2 compliance. CEMS measure SO2 on a 15-minute basis. Therefore, the 30-day averaging time specified for the SO2 BACT limit is legally erroneous.

I. Setting a Control Efficiency of 98 Percent Does Not End IEPA's Inquiry

IEPA established a control efficiency of 98 percent as part of the BACT determination for SO2 for the first time in the final permit. IEPA claims that the 98 percent control limit makes the proposed SO2 BACT limit of 0.182 lb/MMBtu more stringent than other lower emission limits that do not include control efficiencies. Response, Pet. Ex. 12 #110. While Petitioners support a control efficiency limit, the control efficiency limit proposed by IEPA fails to accomplish its stated goal, is not practically enforceable, and does not satisfy BACT.

1. The 98% Control Efficiency Is Not Practically Enforceable

The final permit requires that 98% SO2 control efficiency be achieved on an annual basis as part of the BACT determination, based on a 12-month rolling average. Permit, Pet. Ex. 1 at 19, Condition 2.1.2.b.ii.B. This limit is not practically enforceable. Practical enforceability means the source must be able to show continuous compliance with each limitation or requirement.[45]

[45] *See, e.g.*, "Guidance on Limiting Potential to Emit in New Source Permitting," from Terrell F. Hunt, Associate Enforcement Counsel, OECA, and John Seitz, Director, OAQPS, to EPA Regional Offices, June 13, 1989.

"The averaging time for all limits must be practically enforceable. In other words, the averaging time period must readily allow for determination of compliance. USEPA policy expresses a preference toward short term limits, generally daily but not to exceed one month." 1/25//95 Stein Memo.[46] See also 1/25/92 Seitz Memo.[47] The NSR Manual clarifies that permit limits "must always ensure that restrictions are written in such a manner than an inspector could verify instantly whether the source is or was complying with the permit conditions. Therefore, short-term averaging times on limitations are essential." NSR Manual at c.4. The annual averaging time for the 98 percent control efficiency limit is far too long to be practically enforceable and should thus be remanded to IEPA to require a shorter averaging time, no longer than the 30-day rolling average used to set the BACT emission rate limit.

Additionally, the Revised Permit fails to establish any sampling and testing frequency to determine compliance with the 98 percent SO2 control efficiency. Permit, Pet. Ex. 1, Condition 2.1.10. Nor does the permit explain how the control efficiency would be measured and calculated. The permit does not state how or where the controlled SO2 would be measured. Compliance could be determined, for example, using either Method 19 or the CEMS required to determine compliance with the SO2 emission rate limit. The results from these two tests would be significantly different. The permit should be remanded to clarify how the SO2 control efficiency will be measured and calculated. The revised permit should also specify how frequently the control efficiency must be tested to calculate an annual average.

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[46] Memorandum from Kathie A. Stein, Director, Air Enforcement Division, to Directors, Regions I-X, Re: Guidance on Enforceability Requirements for Limiting Potential to Emit through SIP and 112 Rules and General Permits, January 25, 1995 ("1/25/95 Stein Memo").

[47] Memorandum from John S. Seitz to Directors, Re: Options for Limiting the Potential to Emit (PTE) of a stationary Source Under Section 112 and Title V of the Clean Air Act, January 25, 1992.

2. The 98 Percent Control Limit Should Apply on Startup

The final 98 percent SO2 control efficiency takes effect 18 months after initial startup. Permit, Pet. Ex. 1, Condition 2.1.2.b.ii.B. BACT limits must be effective on startup, not 18 months later. IEPA offers no explanation why Peabody needs eighteen months to comply with an SO2 control efficiency limit. A significantly shorter time period for compliance is necessary, particularly because SO2 is a source of the fine particulate problems plaguing St. Louis and the Mingo National Wildlife Refuge. The permit should be remanded to require that the control efficiency limit apply upon startup.

3. The 98% Control Efficiency Does Not Make BACT Limit More Stringent

The final permit sets a SO2 BACT emission limit based on a 30-day rolling average and a SO2 control efficiency based on a rolling annual average. The IEPA claims that these two limits together make the BACT limit more stringent than others cited by Petitioners. Pet. Ex. 12 #110. However, the mismatched averaging times do not assure that the BACT emission limit is either more stringent or continuously achieved.

The BACT emission limit was calculated by assuming 98% sulfur control for the worst case coal. Because "worst-case" coal is rarely used, a 98 percent annual average removal efficiency allows some 30 day periods to achieve a lower than 98 percent control, so long as the annual average is 98 percent. Thus, the mismatched averaging times undercut the requirement that BACT limits be met continuously. The permit should be remanded to require that the same averaging time be used for both the emission rate and control efficiency limits.

XI. USEPA Failure to Affirmatively Consult With Interior to Protect Air Quality In Mingo is Clear Legal Error and a Significant Policy Issue for This Board

The U.S. Department of the Interior found that Peabody's proposed facility would adversely impact the Mingo National Wildlife Refuge. The State of Illinois – with its Governor touting a Coal Revival Program, and having no particular interest in protecting out-of-state public lands – rejected that finding. The Board and USEPA must now decide whether to uphold IEPA's decision, despite the objections of the Interior Department. Congress has declared "as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class 1 Federal areas which impairment results from manmade air pollution." 42 U.S.C. § 7491(a)(1). And indeed, one of the stated purposes of the PSD program is "to preserve, protect and enhance the air quality in national parks [and] national wilderness areas." 42 U.S.C. § 7470(2).

The Mingo Refuge already suffers from some of the worst visibility problems of any area in the United States. See Hoffman Letter, Pet. Ex. 10. The permit should be remanded; IEPA's decision to reject Interior's conclusions was unlawful, unreasonable and arbitrary, and USEPA therefore lacks any rational basis upon which to reject the Department of Interior's impairment finding.

A. The Clean Air Act Requires USEPA to Coordinate With Interior Before a PSD Permit Can Be Issued Over Interior's Objections

The Act requires that USEPA make an independent determination as to the impairment of air quality values at Mingo. The Act requires USEPA to coordinate the protection of federal class 1 areas with the appropriate Federal Land Manager. 42 U.S.C. § 7475 (d)(2)(B). The Act gives USEPA the authority to issue or deny the permit. Though it has delegated administration of the permitting program to a state agency, USEPA remains the final decision-maker. Hadson Power, 4 E.A.D. at 276 n.26. See also

40 C.F.R. § 52.21(u) ("The Administrator shall have the authority to delegate his responsibility for conducting new source review * * *.") (emphasis added); 42 U.S.C. § 7410(c)(3) ("[T]he Administrator may delegate * * * the authority to implement and enforce" PSD program."). The presence of the appeal before this Board, and the jurisdiction claimed by the Circuit Courts over USEPA's permitting decisions, confirms USEPA's ultimate responsibility for those decisions. See 42 U.S.C. § 7607(b) (providing jurisdiction only over "final action[s] of the Administrator").

As such, USEPA must, before issuing the permit, determine whether the Department of Interior has "demonstrate[d] * * * that the emissions from [the] facility will have an adverse impact on the air quality-related values (including visibility) of such lands." 42 U.S.C. 7475(d)(2)(C)(ii). See also 50 Fed. Reg. 28,544, 28,549 (July 12, 1985) (issuing authority "must have a rational basis for concluding [FLM's] analysis is incorrect, given the [FLM's] affirmative responsibility and expertise regarding the Class I areas within their jurisdiction"). If the Department has demonstrated such an adverse impact – as it has here – USEPA may not issue a permit. Citizens for Clean Air v. U.S. E.P.A., 959 F.2d 839, 841-42 (9th Cir. 1992) (requiring USEPA to "articulate a rational connection between the facts found and the choice made" for PSD permit issued pursuant to delegated authority).

B. IEPA's Decision to Reject Interior's Findings Was Unlawful, Unreasonable and Arbitrary

"T]he Clean Air Act contemplates an active role for [Federal Land Managers] in the PSD permitting process." Hadson Power 14 – Buena Vista, 4 E.A.D. 258, 275 (EAB 1992). Federal managers "share [the] responsibility," with the permitting authority, of determining whether an adverse impact will result from a proposed facility. 50 Fed. Reg.

28,549 (July 12, 1985). USEPA has recognized that Federal Land Managers possess expertise "regarding the Class I areas within their jurisdiction." Id. Indeed, the Act gives federal land managers an "affirmative responsibility to protect" air quality related values (AQRVs) in the class I lands under their control. CAA § 165(d)(2)(B).

Section 165(d)(2)(C)(ii) of the Clean Air Act provides that a permit shall not be issued in any case where the Federal Land Manager of a class I area demonstrates to the satisfaction of the permitting authority that the emissions from the facility will have an adverse impact on the air quality related values of the class I area. See also 40 CFR § 52.21(p)(4). "[S]tates do not have unfettered discretion to reject an FLM's adverse impact determination." Old Dominion Electric Cooperative, 3 E.A.D. 779 at n.9 (EAB 1992); Hadson Power 14 at II.A. "If a state determines that an FLM has not satisfactorily demonstrated an adverse impact * * * from the proposed facility, the state must provide a 'rational basis' for such a conclusion." Hadson Power 14 at II.A. In Hadson Power, the Board held that the permitting agency committed clear error when it summarily rejected an FLM's adverse impact determination, "eviscerat[ing] * * * the class I area protection provided by the Clean Air Act." Id.

C. IEPA Failed To Give a Legally Adequate Explanation In Rejecting the Interior Department's Adverse Determination

In the Clean Air Act, Congress declared as a national goal "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." 42 U.S.C. § 7491(a)(1) (emphasis added). Thus, IEPA's contention that various emissions have declined since 1990 is irrelevant to this permit determination, and does not adequately

respond to Interior's concerns. See IEPA Letter to Interior, 3 (Jan. 13, 2005) (attached as Pet. Ex. 29) (hereinafter IEPA Response Letter).

IEPA's detailed account of existing and proposed regulatory programs is simply nonresponsive to Interior's concerns. IEPA does not deny that Mingo suffers from existing air pollution, visibility impairment, or high loadings of sulfate and nitrate from atmospheric deposition. IEPA explains that the final permit contains several changes, but does not detail how these changes result in the type and magnitude of reductions necessary to address Interior's adverse impacts determination.

IEPA's proposed changes included (1) reducing the BACT limit for nitrogen oxide (NOx) emissions from 0.08 lbs/MMBtu to 0.07 lbs/MMBtu; (2) reducing the daily SO2 emission limit by 20% within 24 months of start-up of the boiler (from 0.42 to 0.32 lbs/MMBtu), based on testing experience; (3) setting a BACT limit for SO2 in terms of control efficiency, i.e., requiring that Peabody achieve 98% reduction in SO_2 emissions on a rolling 12-month basis; and (4) re-evaluating the SO2 and PM limits after several years of operating data have been accumulated and reducing those limits if lower limits can be reliably met; and (5) require Peabody to limit SO2 levels for the next four years and purchase additional SO2 credits. See IEPA Response Letter, Pet. Ex. 29.

IEPA did not address Interior's concern that Peabody's modeling was using a 30-day rolling average for SO2, and not a 24-hour average. See Attachment to Hoffman Letter: Supporting Information for the Department of the Interior Adverse Impact Conclusion on Air Quality Related Values in the Mingo Wilderness Area from Proposed Emissions by the Prairie State Generating Station, 7, at Pet. Ex. 10. IEPA did not adequately respond to this concern. No data was provided supporting IEPA's contention

that short-term modeling would not result in significantly different visibility impacts. IEPA Response Letter, Pet. Ex. 13 at 7.

D. IEPA Did Not Adequately Respond to FWS's Concerns Regarding Coal-Washing and Coal Blending

The FWS, along with many others, urged IEPA to require Peabody to wash its coal as one cost-effective and proven way to reduce SO2 emissions. See Hoffman Letter, Pet. Ex. 10 at 10. Based on its modeling, the FWS concluded that washing would "get the facility closer to protecting the visibility and AQRV resources * * *." FWS Memo, Pet. Ex. 30 at 3. The FWS urged IEPA to consider the multiple benefits of coal washing in conjunction with a scrubber; IEPA declined. Id. The failure to adequately respond to the FWS request to consider coal washing and other readily available methods to reduce SO2, such as blending in low-sulfur coal, is arbitrary and unreasonable. IEPA's refusal to consider coal washing is all the more unreasonable now that it has added a new provision in the final permit allowing Peabody to use washed coal from other mines.

E. The Promise to Reduce Short-Term SO2 limit Is a Goal, It Is Not Guaranteed in the Permit

IEPA also added a provision which it asserts will reduce the daily SO2 limit by 20 percent within 24 months of startup of the boiler (from 0.42 to 0.32 lbs/MMBtu). Response, Pet. Ex. 12 #306. Again, however, IEPA does not point to any modeling or other empirical data to support its position that this new provision will reduce Peabody's effect on Mingo. First, the 24-hour limit is identical in the draft permit and the final permit: both are 3,126 lbs/hour for a 24-hour average. Compare Table I in Draft Permit and Final Permit. Second, the only "difference" is that the final permit requires a SO2 optimization study. Permit, Pet. Ex. 1 at 34, Condition 2.1.16. This provision instructs Peabody to evaluate its SO2 emissions within 180 days of boiler start up to determine and

drop the limit to "2,450 lbs/hour, daily average, not be exceeded more than one day per month, annual average." Id. This provision, however, allows Peabody to claim "unacceptable or unreasonable consequences" and to thereby maintain its existing SO2 daily limit. Id.

More troubling still: this "new" limit is written in lbs/hour, not lbs/MMBtu. According to the FWS's assessment, a rate of 3,126 lb SO2/hr is the equivalent of 0.42 lbs SO2/MMBtu for each boiler operating at full capacity. FWS Memo, Pet. Ex. 30 at 3. Therefore, when the boilers operate below full capacity, this new lbs/hour rate remains unchanged, but Peabody emissions in terms of lbs/mmMBtu could soar. For example, at an 80 percent capacity the short-term SO2 rate could increase to 0.525 lbs/MMBtu. Id. In short, this provision offers little help for Mingo.

F. The "Over-Purchase" of Additional SO2 Allowances Is Temporary

IEPA also added a new provision requiring Peabody to "over-purchase" SO2 allowances of 25 percent above its actual emissions, until the Clean Air Interstate Rule, Clear Skies, or some other such program goes into effect. Response, Pet. Ex. 12 #315. The FWS concluded that the temporary overpurchase of SO2 credits is "hollow" because it only lasts for a few years and the amount of reduction "doesn't come near to the levels needed to mitigate the impacts enough to alleviate the adverse impact." FWS Memo, Pet. Ex. 30 at 2. Moreover, SO2 credits are part of a national trading program to reduce SO2 emissions and thereby reduce acid rain. Reducing SO2 in North Carolina may help reduce acid rain in the Adirondacks, but it likely does not help alleviate visibility problems in Mingo. In short, a general requirement that Peabody purchase SO2 credits does not ensure any air quality improvement at Mingo.

On January 5, 2005 the Interior Department communicated to IEPA that "these proposals did not substantiate removal of the adverse impact conclusion." FWS Summary, Pet. Ex. 30 at 1. IEPA's decision to ignore these concerns is unlawful. IEPA's arbitrary rationale is grounds for this Board to remand the permit.

G. IEPA Also Committed Clear Error When It Failed to Notify the Public Why It Was Rejecting the Interior Department's Adverse Impact Finding

40 C.F.R. 52.21(p)(3) provides:

> The Administrator shall consider any analysis performed by the Federal Land Manager * * * that shows that a proposed new major stationary source * * * may have an adverse impact on visibility in any Federal Class I area. Where the Administrator finds that such an analysis does not demonstrate to the satisfaction of the Administrator that an adverse impact on visibility will result in the Federal Class I area, the Administrator 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.

IEPA's public notice did not state that the Federal Land Manager had determined that Peabody's proposed project would "adversely affect" the Mingo Refuge, let alone explain its decision. Here is what IEPA told the public:

> 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 the application.

IEPA, Notice of Public Hearing and Comment Period, Proposed Issuance of a Construction Permit/PSD Approval to Prairie State Generating Station, LLC, (undated).[48] A person reading IEPA's notice could not reasonably deduce from this information that the FWS had concluded that Peabody's proposed facility would adversely affect the

[48] Available at http://yosemite.epa.gov/r5/il_permit.nsf/2f3e96d539e4a2a28625666b0063b9a1/68b5945a1e2877b085256e3000546221/$FILE/PrairieStateGeneratingCompany.pdf (last visited 2.20.2005).

Mingo Refuge. Therefore, this statement does not meet the minimum notice requirements of 40 C.F.R. 52.21(p)(3).

IEPA's Project Summary misstates FWS's findings:

> Prairie State's visibility modeling for the emissions of the proposed plant over a period of three years identified one day with reduced visibility corresponding to greater than 10 percent light extinction (12.1 percent) compared to natural conditions. The modeling also identified three days with light extinction between 5 and 10 percent (6.1, 6.4, and 7.5 percent).

IEPA, Project Summary For A Construction Permit Application from the Prairie State Generating Company (undated).[49]

The FWS in fact had concluded that over a three-year period there would be 36 days over 5% visibility impact and 12 days over 10% visibility impact. The Project Summary fails to mention this difference of opinion in its public notice. Failing to disclose that the FWS had concluded significantly greater adverse impacts denied the public critical information about the expected impacts of Peabody's proposed pollution. This violates 40 C.F.R. 52.21(p)(3). The Board should remand the permit for this reason.

XII. The Proposed PM/PM10 BACT Limit is not BACT

The draft permit proposed a filterable PM/PM10 BACT limit of 0.015 lb/MMBtu and suggested that the condensable particulate matter (CPM) fraction, estimated to be 0.035 lb/MMBtu, be met using sulfuric acid mist as a surrogate. The draft permit did not set a total PM/PM10 emission limit or a condensable PM/PM10 emission limit. See Pet. Ex. 5, Fox Comment IV. IEPA received comments arguing that this proposal was not BACT. See Response, Pet. Ex. 12 #157-182.

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[49] Available at http://yosemite.epa.gov/r5/il_permt.nsf/2f3c96d539c4a2a28625666b0063b9a1/68b5945a1e2877b085256c3000546221/$FILE/PrairieStateGeneratingCompanyProjectSummary.pdf (last visited 2.20.2005)

In the final permit IEPA retained the filterable PM/PM10 limit of 0.015 lb/MMBtu and set a new limit of 0.035 lb/MMBtu on total PM/PM1010, comprising the sum of filterable plus CPM. This limit may be lowered in the future based on stack testing conducted pursuant to a plan. Permit, Pet. Ex. 1 at Condition 2.1.2.b.i.B and 2.1.17. This new PM/PM10 limit, which has not been subject to public review, is not BACT for total PM/PM10. The permit should be remanded to IEPA to reconsider both of these limits, for the reasons set out below.

A. The Total PM/PM10 Limit of 0.035 lb/MMBtu Is Not BACT

The final permit adds a new provision: a limit on total PM/PM10 emissions of 0.035 lb/MMBtu. Permit, Pet. Ex. 1 at 16, Condition 2.1.2.b.i.B. The USFWS noted that "the limit of 0.035 lb/MMBtu is still high for BACT." IEPA 4/13/05 Response to USFWS at 4. Petitioners agree.

This limit may be reduced to as little as 0.018 lb/MMBtu based on five stack tests performed over a 3-year period. Permit, Pet. Ex. 1 at Condition 2.1.17. IEPA justifies setting the final BACT limit based on a future study by citing to this Board's AES Puerto Rico decision and arguing little is known about CPM, a component of total PM/PM10. Response, Pet. Ex. 12 #168,180. This is legally and factually erroneous. Moreover, because this new limit has not been subject to public review it is ripe for review.

Petitioners commented that lower total PM/PM10 limits had been established for four similar coal-fired power plants, including Peabody's essentially identical 1500-MW mine-mouth Thoroughbred Generating Station ("TGS") in Kentucky. Response, Pet. Ex. 12 # 182. In that Kentucky case, Peabody agreed to a total PM/PM10 limit (including CPM) of 0.018 lb/MMBtu, or nearly half of the limit included in this IEPA permit.

Thus, Peabody has already agreed that a PM/PM10 limit of 0.018 lb/MMBtu for a facility with the same type of boilers and pollution control train and firing a similar high ash, high sulfur coal is achievable. Neither IEPA nor Peabody has explained why the same PM/PM10 limit cannot be met in Illinois.

Further, Petitioners identified three other similar coal-fired power plants that have been permitted or are proposed with a BACT PM/PM10 emission limit of 0.018 lb/MMBtu. Response, Pet. Ex.12 #182 ("Several permits have been issued recently for proposed power plants with total PM10 limits of 0.018 lbs/MMBtu, short-term average: Longview in West Virginia; Thoroughbred in Kentucky; and Elm Road in Wisconsin.") IEPA responded that "the collection of information assembled in this comment does not demonstrate that a limit of 0.018 lb/MMBtu for total PM10 is achievable in the sense that the Illinois EPA believes is needed to set a BACT limit." Id.

This (and similar statements elsewhere, e.g., Pet. Ex. 12 #181) is contrary to the NSR Manual, which states that a permit limit is usually sufficient justification to assume the technical feasibility of an emission limit. NSR Manual at B.7. The IEPA does not explain why four lower permit limits on total PM10 emission from very similar projects do not justify the selection of a lower limit for Prairie State.

Again, IEPA rejected identified permit limits at other coal-fired power plants without an adequate explanation. IEPA must give more reasons to overcome the presumption that 0.018 lb/MMBtu is BACT. In re Hibbing Taconite Company at 842-843. Particularly confounding is that IEPA does not identify what information it believes is needed to establish PM/PM10 BACT limits nor does it explain with any detail why the

identified facilities with PM/PM10 BACT emission limits of 0.018 lb/MMBtu do not establish BACT in this instance.[50]

B. BACT Limits Must Be Established Prior to Construction

The final permit requires that the total PM10 limit of 0.035 lb/MMBtu be lowered within 3 years of startup based on a test plan, unless it is demonstrated that a lower limit cannot be reliably met without unacceptable consequences. Pet. Ex. 1, Condition 2.1.17.

IEPA points to this Board's decision in AES Puerto Rico to support its claims that there is limited information available on condensable particulate matter, justifying a creative approach to controlling it. Response, Pet. Ex. 12 #180. This is clear error.

First, this decision is six years old. Substantial experience measuring and regulating total PM/PM10 has been gained since, as demonstrated by the total PM/PM10 limits established or proposed for the four facilities cited in Petitioners' Comments and summarily dismissed by IEPA. Further, USEPA Region 3 identified a fifth facility, Northampton, that has a total PM limit of 0.0088 lb/MMBtu that has been achieved, based on stack tests. USEPA concluded that this limit was applicable to the Longview facility, which is similar to Prairie State. Pet. Ex. 5, Ex. 6. The stack tests indicate that this facility has achieved a total PM emission limit of 0.0045 lb/MMBtu, or one half of the Peabody permit limit. Pet Ex. 12 #171. IEPA claims that West Virginia concluded that the subject test did not measure condensable PM10. This conclusion is incorrect and the permit should remanded on this basis. See Northampton stack test results attached as Pet. Ex. 46.

[50] IEPA does note that one of the permit limits offered by this comment only considered the filterable portion of PM/PM10, but no specifics on the other coal plants. However, IEPA is wrong on this point, as discussed below and demonstrated by the stack test, attached at Pet. Ex. 46.

Second, the PSD program and its BACT determination is a preconstruction review requirement. 42 U.S.C. § 7475(a) ("No major emitting facility * * * may be constructed in any area unless * * *."). A BACT limit must be established in the PSD permit, before the start of construction, not over three years later. IEPA erred when it rejected without explanation relevant information about other coal plants that have been recently permitted at a total PM/PM10 limit of 0.018 lbs/MMBtu.

C. IEPA Did Not Explain Why It Set Peabody's PM/PM10 Limit at 0.035 lb/MMBtu, a Level That Does Not Constitute BACT

In the final permit IEPA inserts a new total PM/PM10 BACT limit of 0.035 lb/MMBtu. Permit, Pet. Ex. 1 at 16. This limit is not accompanied by any identifiable BACT top down analysis. The only "support" Petitioners identified is a flawed back-of-the-envelope calculation. IEPA's calculation starts with total PM/PM10 emissions of 0.05 lb/MMBtu of which 0.035 lb/MMBtu is assumed to be condensable PM/PM10, based on the draft permit. Pet. Ex. 2 at 63, Table I, note d. IEPA then deducts one-half of the condensable fraction or 0.0175 lb/MMBtu (0.035 x 1/2) to account for the sulfuric acid mist removed by the wet ESP. Response, Pet. Ex. 12 #176. This yields 0.0325 lb/MMBtu. The IEPA then rounds this up to 0.035 lb/MMBtu. This hardly rises to the level of a top down BACT analysis. Further, the calculation is flawed.

The starting point for IEPA's calculation is a total PM/PM10 emission rate of 0.05 lb/MMBtu. This rate was too high to start with and had no basis in reality. Response, Pet. Ex. 12 #168, #182; Dr. Fox Comments at IV.C. IEPA responded that they agreed that this limit was not BACT and stated they had lowered their estimate to 0.035 lb/MMBtu. However, IEPA calculated the new limit from the old limit. Thus, their response suffers from the same defect as the original estimate: no data. There was no

basis for IEPA to select the original 0.05 lb/MMBtu rate. There is no documented basis for selecting 0.035 lbs/mmBtu either.

IEPA should have started its BACT calculation for total PM/PM10 by considering the BACT permit limits for various components of total particulate matter, such as filterable PM/PM10 and sulfuric acid mist. IEPA's calculation assumed that sulfuric acid mist is one half of the condensable fraction of 0.035 lb/MMBtu or 0.0175 lb/MMBtu (0.035 x ½). The permit, however, limits sulfuric acid mist to 0.005 lb/MMBtu. Permit, Pet. Ex. 1 at 18, Condition 2.1.2.b.vi. If the IEPA is correct that one half of the condensable PM/PM10 is sulfuric acid mist, the condensable fraction of PM/PM10 is simply 0.005 lb/MMBtu times two or 0.010 lb/MMBtu. The permit also limits filterable PM/PM10 to 0.015 lb/MMBtu. Id. at 16, Condition 2.1.2.b.i.A. Thus, a starting point for a total PM/PM10 limit would be 0.025 lb/MMBtu, based on PSGS's permit limits and IEPA's assumptions, not 0.035 lb/MMBtu. However, this calculation is not an ending point and should have been supplemented by considering other sources of information, including the four permits discussed above.

In sum, the newly proposed total PM/PM10 limit is not supported by a BACT analysis that demonstrates that it is based on the maximum degree of reduction that is achievable. It is also inconsistent with BACT limits for other pollutants in the final permit. IEPA must conduct a top down BACT analysis for total PM/PM10 and rebut the presumption that BACT for Peabody is a PM/PM10 emission rate no higher than 0.018 lb/MMBtu. The total PM/PM10 limit should be remanded for a new determination.

D. The Test Plan and Final Report Must Be Subject to PSD Notice, Review, and Appeal Provisions

The final permit requires that the total PM10 limit be lowered within 3 years of startup unless it is demonstrated that a lower limit cannot be reliably met without unacceptable consequences. Pet. Ex. 1, Condition 2.1.17. This provision requires that the permittee submit a test plan to IEPA within 180 days of startup. Pet. Ex. 1, Condition 2.1.17.b.i. The results of the test plan shall be completed and submitted to IEPA in a written report within 3 years of startup. Pet. Ex. 1, Condition 2.1.17.b.ii.A.

The purpose of the subject plan and report is to revise the total PM10 BACT limit. Thus, the plan and report are subject to the PSD notice, review, and appeal provisions. The final permit does not require that they be subject to public notice, review, and appeal. Tallmadge, slip op. at 26. Further, the provision authorizing the plans does not specify what conditions might be included in the plan or indicate what criteria would be used in approving the plan and report. RockGen, 8 E.A.D. 536, 553. Thus, the permit should be remanded to require that Condition 2.1.17 require that the test plan and report be subject to the public notice, review, and appeal provisions of the PSD program.

E. The Filterable PM Limit Is Not BACT

The final permit sets a limit of 0.015 lb/MMBtu on filterable PM. Pet. Ex. 1, Condition 2.1.2.b.i. Petitioners provided substantial evidence, over 200 stack tests, that demonstrate that lower filterable PM limits are routinely achieved by coal-fired power plants. Pet. Ex. 1, Sec. IV.B. The IEPA rejected this data, arguing that it has the discretion to apply a large safety factor, here a factor of over 4.7.

Petitioners and the National Park Service also identified several facilities that are permitted or proposed to be permitted with filterable PM10 limits ranging from less than

0.0088 lb/MMBtu (total) to 0.012 lb/MMBtu. Pet. Ex. 5, Sec. IV.B.1 and Ex. 7; IEPA 4/27/05 Memo, Attach. 2.5. Petitioners also note that Nevada recently issued a permit to Newmont Mining with a filterable PM limit of 0.012 lb/MMBtu.[51] These lower permit limits were rejected by IEPA "based on the lack of an adequate margin of safety to assure compliance." Pet. Ex. 12 #162. This is contrary to guidance in the NSR Manual and prior EAB decisions.

The NSR Manual notes that a permit requiring an emission limit "usually is sufficient justification to assume the technical feasibility"of the limit. NSR Manual at B.7. The IEPA also concedes that "[f]or PM/PM10, in particular, the emission limits set in permits for other plants, or even proposed in the applications for new plants, are more useful as they reflect consideration of normal variation in performance." Pet. Ex. 12 #167. (The IEPA equivocates itself on this point elsewhere, e.g., Pet. Ex. 12 #181.)

However, the IEPA inexplicably rejects all lower PM/PM10 permit limits and proposed limits in applications. Petitioner's evidence identifies five facilities with lower filterable PM permit limits than proposed for Prairie State (JEA, Northampton, Wygen II, Intermountain, Hardin), two of which have been confirmed by source testing. A sixth permit with lower filterable PM limits (0.012 lb/MMBtu), Newmont, was recently issued. The IEPA's response does not explain why, in this case, these lower permit limits require the application of a safety factor, since, presumably, the permitting agencies already considered and applied a safety factor.

The IEPA's only justification appears to be: (1) the limits are not directly transferable because Prairie State will use "continuous particulate matter monitoring"

[51] http://www.epa.gov/ttn/catc/dir1/natlcoal.xls.

(Pet. Ex. 12 #170) and (2) test results are variable (Pet. Ex. 12 #163). Both of these claims are clearly erroneous.

First, the Prairie State permit does not require the use of "continuous particulate matter monitoring" to determine compliance with the filterable PM limit. Compliance is determined by stack testing. Pet. Ex. 1, Condition 2.1.8.a.iv.A. The PM CEMS is only used for "compliance assurance monitoring." Pet. Ex. 1, Condition 2.1.109.d. This is explained elsewhere by IEPA, who argues that the high moisture content of the stack will likely prevent the use of PM CEMS. Pet. Ex. 12 #174.

Second, the IEPA argues that test results can be ignored under the safety factor theory because measurements at three plants vary over an order of magnitude from time to time. Pet. Ex. 12, #163, 164. Particulate matter originates from ash in the coal. The more ash, the more particulate matter. The stack tests provided by Petitioners are all from facilities that do not have a dedicated coal supply and buy coal from a variety of sources with variable ash contents. See, e.g., Energy Information Agency, coal delivery data.[52] Thus, substantial variability would be expected, based on variability in ash content of the coal. The Prairie State facility, on the other hand, is a mine mouth facility and will burn the same coal, day in and day out. Thus, the permit should be remanded to require IEPA to revisit the stack test data to consider variability due to changes in coal supply.

Finally, the EAB has concluded that the permitting agency has the discretion to consider a safety factor in certain limited cases. In a similar case, the EAB concluded that the permitting agency had the discretion to set a less stringent limit than suggested by two dozen stack tests because it had selected "the most stringent filterable PM limit ever

[52] Form EIA-423 Database, http://www.eia.doe.gov/cneaf/electricity/page/eia423.html.

imposed on similar facilities ***." In re Steel Dynamics, 9 E.A.D. 165, 188 (EAB June 22, 2000). However, these facts are not present in the instant case. IEPA has rejected over 200 stack tests and lower permit limits, without explaining why they warrant rejection, based solely on an unidentified safety factor. The IEPA has abused its discretion. The permit should be remanded to require that IEPA establish a lower filterable PM BACT limit, based on both stack tests and permit limits.

F. The PM/PM10 Limits Are Not Enforceable

BACT emission limits must be met on a continual basis and must be enforceable as a practical matter. NSR Manual at B.56. The PM/PM10 BACT emission limits in the final permit are not clearly enforceable because compliance testing is infrequent and the proposed PM CEMS will not be used to ensure and enforce continual compliance. Response, Pet. Ex. 12 at #160, 161, 335.

Petitioners commented that a minimum of annual stack testing should be required. Pet. Ex. 12 #175. The IEPA increased the PM/PM10 monitoring frequency, but argued that annual testing is "inappropriate for the construction permit," but may be required as part of the Title V permit. Id. The PSD permit and the Title V permit comply with separate regulatory program. The PSD provisions in the subject permit must require sufficient monitoring to assure that BACT limits are continuously met. NSR Manual at B.56. A single test every 30 months (Condition 2.1.8.a.iv) is not adequate to assure continuous compliance. Deferring the monitoring required to determine compliance with BACT limits is clear legal error. The permit should be remanded to require more frequent testing and other methods to assure continuous compliance in the final permit.

The only testing method required to demonstrate compliance appears to be stack tests. Petitioners commented that stack testing is not representative of routine operating

conditions. Response, Pet. Ex. 12 #161. IEPA agreed, but argued this is not a concern because the final permit requires Peabody install and operate a PM CEMS. Response, Pet. Ex. 12 #161,174. However, the intended use of the PM CEMS is ambiguous.

The final permit does require a CEMS for filterable PM/PM10. Permit, Pet. Ex. 1 at 30, Condition 2.1.10.d.i. However, this condition in its entirety states that "[t]he Permittee shall install and operate a particulate matter continuous monitoring system on each boiler for the purposes of compliance assurance monitoring." Id. Does for the "purposes of compliance assurance monitoring" mean that CEMS data may be used for demonstrating compliance, or non-compliance? Further, the requirement to install and operate the PM CEMS is in a section captioned "Operational Monitoring and Measurements." Permit, Pet. Ex. 1 at 29-30. Other permit sections indicate that compliance with the PM/PM10 limits would be determined using stack tests. Permit, Pet. Ex. 1 at 25, Condition 2.1.8. The permit should be remanded to IEPA to clarify that the PM CEMS can be used to determine compliance with the filterable PM/PM10 limit.

The IEPA's response also claims that the permit "requires Prairie State to develop and maintain documents that formally define the relationship between monitored data and particulate matter emissions ***." Pet. Ex. 12, # 160. However, Petitioners could not find any such condition in the permit. The proposed surrogate monitoring is required under 40 CFR part 64. However, here IEPA has included it in a PSD permit and used it to justify continuous compliance with the filterable PM BACT limit. Thus, the permit should be remanded to require a formal surrogate monitoring document that is subject to public notice, review, and appeal.

Finally, IEPA's response as to the efficacy of stack testing for assuring compliance, claims testing would be conducted under "optimized" condition and the

facility "should be expected to continue operating with an optimized control system." Pet. Ex. 12 #161. However, the permit does not require determining optimized conditions and continued operation under these conditions. The permit should be remanded to require both testing and operation under optimized conditions.

XIII. IEPA Unlawfully Rejected Dry Cooling Without Conducting a Reasoned and Documented BACT Analysis

Petitioners submitted detailed comments urging IEPA to consider dry cooling in its PM BACT. See ALA Comments, Pet. Ex. 6 & Attachment 5. Petitioners' comments included the expert testimony of Mr. Bill Powers, P.E., a Registered Professional Mechanical Engineer in California, with over 20 years of experience in combustion equipment permitting, testing, and monitoring, air pollution control equipment retrofit, design/performance testing; and air emissions testing/criteria and hazardous air pollutants. According to Mr. Powers' testimony, dry cooling offers multiple benefits over wet cooling, including significantly reduced PM emissions and a 95-98 percent reduction in water use. Id. As Petitioners explained, reducing water use is a significant environmental issue because the source of Peabody's cooling water – the Kaskaskia River -- is already severely overdrawn for existing power, agricultural, barge and drinking water purposes. Id.

IEPA responded that "dry cooling is certainly a demonstrated technology" and "technically feasible." Response, Pet. Ex. 12 #246. IEPA, however, proceeded to reject dry cooling with the following unsubstantiated claims: (1) "These comments do not provide an adequate basis to require dry cooling," (2) "The additional power required for dry cooling would act to increase emissions of pollutants other than PM," (3) "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," and (4) "as the lower Kaskaskia River is managed for barge travel and is supplied by Shelbyville Lake and Carlyle Lake, the proposed plant would not change the character of the Kaskaskia River." Id. "Accordingly," said IEPA, "dry cooling has already been evaluated." Id.

IEPA (again) does not cite to a shred of evidence in the record to support these statements or suggest that it has conducted a PM BACT analysis for the cooling towers. This is clear error. Once IEPA has been made aware of a "demonstrated technology" that is "technically feasible" it must consider this technology in its BACT analysis. Moreover, each of the issues it raises above as potential reasons to reject dry cooling, such as a potential energy penalty associated with dry cooling (which may be offset by a reduced need for pumping water from the Kaskaskia River), must be documented and incorporated in a top down BACT analysis. The NSR Manual expressly prohibits bald conclusions that lack supporting documentation:

> Applicants should examine the energy requirements of the control technology and determine whether the use of that technology results in any significant or unusual energy penalties or benefits. ... If such benefits or penalties exist, they should be quantified. Because energy penalties or benefits can usually be quantified in terms of additional costs or income to the source, the energy impacts analysis can, in most cases, simply be factored into the economic impacts analysis. * * * While the penalties should be quantified, so long as they are in the normal range for the technology in question, such penalties should not, in general, be considered adequate justification for nonuse of that technology.

NSR Manual at B-29 (emphasis added). BACT's statutory definition requires selection of an emission control technology that results in the "maximum" reduction of a "pollutant achievable" for a facility in view of "energy, environmental, and economic impacts, and other costs." 42 U.S.C. § 7479(3). IEPA does not dispute that dry cooling would result in the maximum achievable reduction of PM emissions. Its failure to conduct a BACT

analysis for the cooling towers is clear error. The Board should remand the permit on this issue.

XIV. IEPA Committed Legal Error When It Issued the Peabody PSD Permit Even Though Peabody's Modeling Demonstrated Its Emissions Would Contribute to Violations of the NAAQS

The Clean Air Act provides that, before a permitting agency can issue a PSD permit to a major source of air pollution, the owner or operator of a major emitting facility must demonstrate that "emissions from construction or operation of [the] facility will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or * * * (B) national ambient air quality standard for any pollutant in any area to which this part applies * * * ." 42 U.S.C. § 7475(a)(3); See also 40 C.F.R. §52.21(k)(1999)(same).

Peabody's modeling of the air quality around its proposed power plant violated the SO2 and PM10 standards. Nevertheless, IEPA issued Peabody a PSD permit. IEPA claims that this does not violate the general prohibition on issuing a permit to a source that will cause or contribute to a NAAQS violation because it may issue a permit as long as Peabody's contribution to the modeled NAAQS is not "significant," where significant is defined as less than the "significant impact level" or SIL based on nonattainment NSR. Response, Pet. Ex. 12 #264, 265.

The Board should grant review of this issue because IEPA's position is clearly legally erroneous. In addition, EAB should grant review of this issue because it raises the important policy consideration of whether a permitting agency can issue a PSD permit to a proposed source that would contribute to a violation of the NAAQS, levels USEPA has determined are harmful to human health and welfare, and if so, how large a contribution can be before a permit must be denied.

A. The Permitted Emissions Would Cause or Contribute to Violations of NAAQS, In Violation of the Clean Air Act

Peabody's December 9, 2003 PSD application provides a summary of its modeling findings. These findings included a maximum SO2 level of 1998.9 ug/m3 for the 3 hour SO_2 NAAQS. Response, Pet. Ex. 12 #266. This is well above the 3-hour SO2 NAAQS of 1300 ug/m3. 40 C.F.R. § 50.5(a). Similarly, Peabody's modeling showed 24-hour SO2 levels of 501.73 ug/m3, again, a level substantially above the 24-hour SO_2 NAAQS of 365 ug/m3. Response, Pet. Ex. 12 # 266; C.F.R. § 50.4(b).[53] The IEPA audited Peabody's modeling, obtaining even higher concentrations. IEPA 4/27/05 Memo at 18, Table C.

These results are apparently based on a 24-hour emission rate of 0.51 lb/MMBtu (3,880 lb/hr), which was subsequently lowered to 0.41lb/MMBtu in the final permit. IEPA 4/27/05 Memo at 19, note l and Permit, Condition 2.1.7, Table I. The final permit further lowers the 24-hour SO2 emission rate to 0.33 lb/MMBtu (2450 lb/hr), up to 24 months after startup. Permit, Pet. Ex. 1, Condition 2.1.7.a.ii.

The file that we reviewed did not contain any analysis of the lowered 24-hour SO2 emission rates to determine if they cured the SO2 NAAQS violations. In fact, IEPA's memorandum summarizing the modeling continued to report the same modeled SO2 concentrations (and NAAQS violations) the day before the final permit was issued. IEPA 4/27/05 Memo at 18, Table C.

Modeled concentrations are generally proportional to emission rates. The revised ambient SO2 concentrations for the lower SO2 emission rates, based on a ratio of the IEPA modeled SO2 concentration data (0.33/0.51), are 1,390.35 ug/m3 3-hour and

[53] Although the NAAQS are provided in the CFR in ppm, the conversion to ug/m3 can be found in page C.4 of the draft 1990 New Source Review Workshop Manual.

339.33 ug/m3 24-hour. Thus, Prairie State would continue to violate the 3-hour SO2 NAAQS (1300 ug/m3), assuming 3-hour emissions equal 24-hour emissions, even after the 24-hour SO2 emission rate is lowered to 2,450 lb/hr (0.33 lb/MMBtu) up to 24 months after startup. Thus, the changes in the permit between the January 14, 2005 version and the April 28, 2005 version do not assure that the project would not cause or contribute to violations of 3-hour SO2 NAAQS. Further, the facility could violate the 24-hour NAAQS until the lowered 24-hour SO2 emission rate in permit Condition 2.1.7.a.ii is effective, up to 2 years after startup.

Peabody's PM10 modeling estimated levels as high as 353.62 ug/m3, over two times higher than the 24-hour PM10 NAAQS of 150 ug/m3. Response, Pet. Ex. 12 #266; IEPA 4/27/05 Memo at 18, Table C; 40 C.F.R. § 50.6(a). IEPA audited Peabody's modeling, obtaining even higher concentrations. IEPA 4/27/05 Memo at 18, Table C.

These violations of NAAQS should have resulted in permit denial. Instead, IEPA ignores, arguing Peabody's contributions to the violations are not "significant" and making other after-the-fact rationalizations for violating the Act's plain language.

B. The Significant Impact Level Is the Wrong Standard for Determining Whether a Source Has Caused or Contributed to an Exceedance of the NAAQS

The PSD program "set[s] as the threshold of 'significant deterioration' for each pollutant in each area as the lower of the allowable increment or the applicable NAAQS, and the emphatic goal of the PSD provisions is to prevent those thresholds from being exceeded." Alabama Power Company v. Costle, 636 F.2d 323, 362 (D.C. Cir. 1979) (emphasis added). Thus, issuing a PSD permit after the applicant predicted and the permitting agency confirmed violations of the 3-hour and 24-hour SO2 NAAQS and 24-

hour PM10 NAAQS is contrary to the long established prohibition against allowing violations of NAAQS in attainment areas.

IEPA justified approving a permit that would cause or contribute to violations of NAAQS by relying on one sentence from the NSR Manual: "The source will not be considered to cause or contribute to a violation if its own impact is not significant at any violating receptor at the time of each predicted violation. In such a case, the permitting agency, upon verification of the demonstration, may approve the permit". Response, Pet. Ex. 12, #267.

However, as demonstrated below, this sentence is contrary to the underlying statute and regulation. Even if it did not violate the law, it does not support the use of "significant impact levels." Finally, this sentence is followed by the statement: "However, the agency must also take remedial action through applicable provisions of the state implementation plan to address the predicted violation(s)." NSR Manual at C.52. There is no evidence in the record that the IEPA has taken remedial actions.

IEPA committed its legal error by relying on the significant contribution levels contained in 40 C.F.R. § 51.165(b)(1) as a basis for issuing a PSD permit despite the modeled violation. IEPA asserts that if Peabody's contribution to a NAAQS violation is below the significant level in 40 C.F.R. § 51.165(b)(1) it is not "culpable" for the violation and therefore should receive a PSD permit.

However, there is no authority for this or any other threshold. The subject PSD regulation, 40 CFR 52.21(k), implements CAA Section 165(a)(3). This section of the CAA does not use the term "significant," which must be read into the regulations to reach IEPA's conclusion on culpability.

The word "significant" occurs in a separate section applicable in nonattainment areas, but not in attainment areas, the subject of the PSD regulations. 40 C.F.R. § 51.165(b)(1) implements Section 110(a)(2)(D)(i) of the Act, 42 U.S.C. § 7410(a)(2)(D)(i). CAA § 110(a)(2)(D)(i) contains two subsections. CAA § 110(a)(2)(D)(i)(I) imposes a ban on sources that will "contribute significantly" to nonattainment in other states. CAA § 110(a)(2)(D)(i)(II), however, does not use the term "significant." It simply references Part C, which is the PSD provision. Part C prohibits a source from causing or contributing to a violation of a NAAQS or increment. CAA § 165(a)(3). Congress did not use the term "significant" in CAA 165(a)(3). It did use that term in CAA § 110(a)(2)(D)(i)(I).

"[W]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." Bates v. United States, 522 U.S. 23, 29-30 (1997) (internal citations omitted); see also Duncan v. Walker, 533 U.S. 167, 173 (2001) (same).

IEPA cannot lawfully apply the "significant" levels found in 40 C.F.R. § 51.165(b)(1) – a provision that implements CAA § 110(a)(2)(D)(i)(I) -- to a decision under CAA § 165(a)(3). CAA § 165(a)(3) does not contain the term "significant." The standard IEPA should have applied is whether PSGS will cause or contribute to a violation of a NAAQS or increment, not whether it will significantly cause or contribute to a violation of a NAAQS or increment. Peabody's and IEPA's modeling estimates that its facility will contribute to a violation of the NAAQS and increment. IEPA should have denied the permit.

Different constructions of the attainment and nonattainment statutory and regulatory language are consistent with the differing goals of the two programs. First, the purpose of the PSD program is to protect areas with clean air and prevent their deterioration. If a large number of sources, each causing increases in ambient air concentrations just below the SILs, as here, were allowed to locate in an area, the area would soon violate NAAQS and become a nonattainment area, defeating the purpose of the PSD program. Thus, the PSD requirement that a new source not "contribute" to NAAQS violations is specifically designed to assure that clean air areas remain clean. In contrast, in nonattainment areas, where the proffered SILs are allowed to determine a "significant contribution" to a NAAQS, emission increases must be offset at a ratio greater than 1:1.

IEPA committed legal error in issuing this permit because the modeled emissions show that the facility would "contribute" to violations of the NAAQS. The permit should be remanded to IEPA to either deny the permit, or require such reductions at other sources of air pollution as necessary to ensure Peabody will not contribute to violations of the NAAQS.

C. Post Hoc Rationalization Does Not Excuse Exceedances of NAAQS

IEPA does not dispute that Peabody's modeling showed that ambient concentrations are already well above the 3-hour and 24-hour SO_2 NAAQS and 24-hour PM10 NAAQS. IEPA does not dispute that Peabody's proposed pollution would increase pollution levels even more. Nonetheless, IEPA offers several reasons to support its decision to issue the Peabody permit. These reasons are not lawful reasons for ignoring the plain language of the Clean Air Act.

First, IEPA claims that the violations are just a "result of the methodology used for air quality modeling[.]" Response, Pet. Ex. 12 #49. The methodology used is required by regulation. 40 CFR 52.21(l) The methodology was used by IEPA to audit Peabody's analysis. IEPA has no authority to reject a methodology after the fact simply because it reveals a violation.

Second, the only support IEPA cites for the "culpability analysis" to excuse violations of increments and NAAQS is page C.28 of the NSR Manual. Response, Pet. Ex. 12 #268. However, this page of the NSR Manual discusses significant impact levels used to determine the Significant Impact Area ("SIA") and to determine if preconstruction monitoring is required. These are steps undertaken before the model is run to determine if there are violations of the NAAQS. The NSR Manual makes no mention of using the significant impact levels on page C.28 to excuse violations of the NAAQS. In fact, IEPA agreed that the significant impact levels are used to determine if additional modeling needs to be done after the SIA is determined, not to excuse NAAQS violations once they are detected within the SIA. See Ex. 18 at 17.

The significant impact levels are inappropriate for determining compliance with NAAQS in attainment areas because the statute and implementing regulation do not contain the word "significant," as discussed above. The applicant must demonstrate that the project does not "contribute" to a violation, not that it does not contribute significantly. The culpability analysis indicates that Prairie State does "contribute" to violations of NAAQS. The IEPA has read a word into the statute and regulation that does not exist. Regardless, the significant impact level is irrelevant because it is based on the maximum modeled concentration (40 CFR 51.165(b)(1)),while NAAQS and increment violations are based on the high second high value. IEPA 4/27/05 Memo, Pet.

Ex. 43 at 18, notes to Table C. The proffered significance thresholds compare apples with oranges.

Third, IEPA suggests that the violations of NAAQS are due to errors in the underlying inventory and promises that it "will investigate the modeled exceedances to determine whether they are due to inaccuracies in the emission or stack data in the inventory for certain existing sources, as is suspected." This claim was made one day before the final permit was issued. IEPA 4/27/05 Memo at 17. Petitioners found no evidence that this issue was resolved before the final permit was issued on April 28, 2005. IEPA cannot justify violations of NAAQS based on future investigations it may or may not conduct that may or may not resolve the subject violations.

XV. It Was Clear Error for IEPA to Accept Peabody's Culpability Analysis When Peabody's Files Show Its Contribution to the NAAQS Violation Is Larger Than Reported

Accepting IEPA's position that a culpability analysis is a legally permissible method to issue a permit to a source that will contribute to violations of NAAQS, Peabody's culpability analysis is flawed. Peabody claimed that at the 0.42 lbs/MMBtu 24-hr SO_2 limit, its power plant will not significantly contribute to any modeled violation of the 24-hour SO_2 NAAQS. See Letter from Dianna Tickner, PSGC, to Chris Romaine, IEPA, dated December 9, 2003 and attached as Exhibit 3 to Ukeiley Comments, Pet. Ex. 4. To support this claim Peabody provided a list to IEPA of time and receptor combinations in which its facility, operating at a SO2 rate of 0.51 lbs/MMBtu would have a contribution of over 5 ug/m3 to a modeled 24-hour averaging time SO2 NAAQS violation. Ukeiley Comments, Pet. Ex. 4 (Ex. 3 at 5-7 (Table 2)). Peabody then calculated what emission rate would bring these contributions down to 4.975 ug/m3, i.e. just under the 5 ug/m3 "significant" level.

However, Peabody did provide to IEPA the highest contributions uncovered during its modeling runs. Petitioners did review the original information and found numerous time and receptor combinations that violated the SO_2 24 hour NAAQS and situations where Peabody's contribution to these violations is greater than the rate of 5.890 ug/m3, the rate it gave to IEPA. See Pet. Ex. 33 (two pages of Peabody's modeling data) and Pet. Ex. 4 (Ukeiley's Comments with Tickner Letter providing limited information to IEPA). Peabody's data indicates that Peabody's greatest contribution to a 24-SO2 NAAQS violation is 6.79868 ug/m3 (see Peabody's event labeled TH241927, attached as Pet. 33), i.e. significantly higher than 5.890 ug/m3. Petitioners used Peabody's scaling methodology to calculate a 24-hour SO2 rate that will ensure that Peabody's SO2 emissions remain below the 5 ug/m3 contribution level (4.975 / 6.79868 * 0.51 = 0.37). To avoid violating the 24-hour SO2 NAAQS Peabody's SO2 rate would have to be set at 0.37 lbs/MMBtu, 24-hour average. The Draft and Final Permits provide a 24-hour SO2 rate of 0.42 lbs/MMBtu.

IEPA summarized but did not respond to this comment. See Response, Pet. Ex. 12 #270. IEPA did offer that an SO2 rate of 0.37 lb/MMBtu is above the "interim" emission SO2 limit IEPA included in its final permit. This "interim" limit may become effective two years after Peabody begins operation. Id. Again, IEPA cites to no authority allowing it to ignore a "significant" contribution to a NAAQS violation because a more stringent permit limit may go into effect in the future.

XVI. IEPA Committed Clear Error When It Failed to Re-Run the SO2 Modeling After Conceding It Used the Wrong Emission Rate for at Least One Source

Peabody used the wrong emission rate for the Warren G. Murray Developmental Center ("Murray"). The Murray permit Condition 7.1.3(d) limits SO2 emissions to 6.8

lbs/MMBtu on a one-hour average. See Ex. 25, Condition 7.1.3(d). This equals 25.7 g/s (6.8 lbs/MMBtu * 30 MMBtu/ hr * 454 g/lb / 3600 s/hr), not the rate Peabody used for Murray of 22.7 g/s. Petitioners raised this comment and IEPA agreed that the correct emission rate for Murray is 6.8 lbs/MMBtu. See Response, Pet. Ex. 12 #270. IEPA's failure to then require Peabody to re-run the modeling with the correct rate for Murray in its 24-hour SO2 NAAQS modeling is clear error.

XVII. IEPA Committed Legal Error When It Used Compliance With the One-Hour Ozone Standard as a Surrogate for Additional Impacts Analysis

The PSD regulations require that in addition to determining if a source will cause or contribute to a violation of a NAAQS or increment, an "owner or operator shall provide an analysis of the impairment to visibility, soils and vegetation that would occur as a result of the source or modification and general commercial, residential, industrial and other growth associated with the source or modification." 40 C.F.R. § 52.21(o) ("Additional Impacts Analysis"). USEPA has stated:

> Each year, ground-level ozone is also responsible for crop yield losses. Ozone also causes noticeable foliar damage in many crops, trees, and ornamental plants (*i.e.*, grass, flowers, shrubs, and trees) and causes reduced growth in plants. Studies indicate that current ambient levels of ozone are responsible for damage to forests and ecosystems (including habitat for native animal species).

69 Fed. Reg. 21,604 (Apr. 21, 2004). Peabody submitted an additional impacts 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. IEPA accepted this clearly erroneous legal interpretation. Its position violates a cardinal rule of regulatory interpretation: a regulation should be read so as to render no part of it redundant or superfluous. See TRW Inc. v. Andrews, 534 U.S. 19, 122 Sup. Ct. 441, 447, 449 (2001) ("a statute ought, upon the whole, to be so construed that, if it can be

prevented, no clause, sentence, or word shall be superfluous, void, or insignificant"). Accepting IEPA's interpretation would mean that the Additional Impacts Analysis requirement in 40 C.F.R. § 52.21(o) for ozone is redundant once a project proponent has demonstrated, pursuant to 40 C.F.R. § 52.21(k), that its proposed source will not cause or contribute to a violation of a NAAQS.

IEPA's legal conclusion is contrary to Congress' plainly stated purpose for the PSD program, which includes the following:

> [T]o protect public health and welfare from any actual or potential adverse effect which in the Administrator's judgment may reasonably be anticipate[d] to occur from air pollution or from exposures to pollutants in other media * * * notwithstanding attainment and maintenance of all national ambient air quality standards * * *.

42 U.S.C. § 7470(1)(emphasis added). "Welfare" includes effects on soils, crops, vegetation, animals, wildlife and visibility. 42 U.S.C. § 7602(h). Congress clearly stated that a PSD analysis must go beyond determining if a source will cause or contribute to a violation of a NAAQS. For good reason: "Congress repeatedly emphasized that NAAQS alone were insufficient to protect public health and welfare." Hawaiian Elec. Co. v. EPA, 723 F.2d 1440, 1446-47 (9th Cir. 1984)(citing H.R. Rep. No. 294, 95th Cong. 105-132, 1977).

On its face IEPA's acceptance of Peabody's soils and vegetation impacts analysis for ozone is clearly erroneous because it is based on the old, 1-hour ozone NAAQS rather than the more stringent 8-hour ozone standard. IEPA offers no justification for allowing Peabody to use the outdated ozone standard.

Even if the analysis compared the impacts to the current 8-hour ozone NAAQS, limiting the analysis of ozone impacts to vegetation to the current NAAQS is still factually wrong. The 8-hour ozone NAAQS is not protective of vegetation. Peabody

relies on outdated scientific studies, all before the 1997 adoption of the 8-hour ozone NAAQS, to claim that because Peabody will not cause a violation of the 1-hour ozone NAAQS, it will not cause harm to vegetation. See Ex. 3 at 20-21. USEPA's 1980 guidance document on soils and vegetation analyses that Peabody relied upon for its analysis of pollutants other than ozone states that sensitive plants are susceptible to ozone damage at 0.06 ppm over an 8-hour period, i.e. 25 percent lower than the current 8-hour NAAQS of 0.08. See Ukeiley Comments, Pet. Ex. 4 (Ex. 11 at 11, 14 & Ex. 13 at 2). More recently, IEPA concluded that "[a]dverse effects on sensitive vegetation have been observed from exposure to photochemical oxidant concentrations of about 100 ug/m3 (0.05 ppm) for 4 hours." 2002 IEPA Annual Air Quality Report at 1.[54]

Peabody's failure to conduct an additional impacts analysis that considered levels of ozone below the 8-hour NAAQS is clear error. As described above, Peabody's pollution is expected to cause "adverse" visibility (and potentially soil and water) impacts at the Mingo Wildlife Refuge 140 kilometers away. The Board should remand this permit until Peabody conducts the appropriate analysis of ozone impacts on vegetation.

XVIII. EPA Committed Clear Error When It Used the Wrong NOx Emission Rate for Peabody to Conclude Peabody Would Not Interfere With the 1-Hour Ozone Standard

IEPA conducted modeling to determine if Peabody would cause or contribute to a violation of the 1-hour ozone standard. See Ex. 22 at 4. This modeling, even using the outdated ozone standard, was clearly erroneous because it used the wrong emission rate for Peabody's NOx emissions. To calculate the short-term NOx rates IEPA simply divided the 30-day NOx rate of 0.08 lbs/MMBtu to come up with a daily rate of 14.47

[54] Available at http://www.epa.state.il.us/air/air-quality-report/2002/air-quality-report-2002.pdf (last visited 2.22.05).

tons of NOx per day. See Response, Pet. Ex. 12 #290. IEPA does not dispute that it used average actual emissions. Id. #290. IEPA does not, however, address its obligation to use short-term rates and not averages.

IEPA's approach is clear error. PSD rules require that short term emission limits be used when modeling for short term impacts. 40 CFR Part 52, App. W, Table 9-2. Peabody's Final Permit contains a 24-hour NOx limit of 893 lbs/hr. See Permit, Pet. Ex. 1, Table I. This is equivalent to 21.432 tons/day. This is level that should have been used in the modeling. Based on IEPA's use of inaccurate modeling data its finding that Peabody's proposed facility will not cause or contribute to a violation of the 1-hour ozone standard, or otherwise interfere with attainment requirements, is arbitrary. See Final Permit, Pet. Ex. 1, Condition 1.6.c

XIX. The Proposed NOx BACT Limit Does Not Represent BACT Because It Was Not Adequately Supported By a Reasoned Analysis

The NOx limit in the revised permit does not represent BACT because IEPA failed to update the BACT determination before reissuing the permit. In addition, IEPA failed to consider as part of the Peabody BACT determination a USEPA BACT determination that represents one of the most authoritative and recent pronouncements by USEPA about BACT for coal-fired power plants.

A. A New BACT Determination Date Is Required

The January 25, 2005 final permit was remanded by this Board because the response to comment document was issued after the final permit. IEPA made substantial changes in the January 25, 2005 permit and reissued it on April 28, 2005. The BACT determination is set on the date of issue of the final permit. "The BACT/LAER

determination for a major new source is not set until the final permit is issued."[55] The BACT determination should be contemporaneous with the final permit. In re St. Lawrence County Solid Waste Disposal Authority, PSD Appeal No. 90-9 (July 27, 1990) "In addition, the Regions felt that establishing a cutoff date at any time prior to the public comment period would limit public participation and the ability of the public to affect changes in the proposed permit * * *." Seitz Letter, January 11, 1990. The cutoff date for the Peabody BACT determination should therefore have been the date of issue of the final permit: April 28, 2005.

Despite an April 28th BACT cut-off date IEPA never reconsidered its BACT determination before reissuing the permit. New information, available before April 28, 2005 but after January 25, 2005, such as the proposed new NSPS for coal-fired units stating that a NOx limit of 0.04 lb/MMBtu was being achieved at a power plant in Texas was not considered by IEPA. See Sierra Club letter to IEPA (April 13, 2004) citing Standards of Performance for Electric Utility Steam Generating Units For Which Construction is Commenced After September 18, 1978, Proposed Rule, 70 Fed. Reg. 9706, 9710-11 (Feb. 28, 2005) ("The WA Parish coal plant in Texas has demonstrated control of approximately 0.04 lb NOx/MMBtu heat input").

In addition, new USEPA data indicates that multiple coal-fired power plants that have been retrofit with SCR are consistently achieving 30-day average NOx emissions rates as low as 0.03 lb/MMBtu. Pet. Ex. 49. Thirteen units are achieving less than or equal to 0.05 lb/MMBtu. Id. Nine of these units operate on bituminous coal and 4 units burn subbituminous coal. Id. A total of 18 units, representing 14 GW of generating

[55] Memorandum from John S. Seitz, Director, Stationary Source Division, Office of Air Quality Planning and Standards, to Regions I - X, Re: BACT LAER Determination Cut-off Date, January 11, 1990; Memorandum from John Seitz, Director Stationary Source Compliance Division, to David Kee, Director Air and Radiation Division Region V, February 24, 1989.

capacity, are achieving less than or equal to 0.07 lb/MMBtu. Id. This data demonstrates that much lower NOx emissions rates are routinely achievable using the same control technology proposed for Peabody's facility. IEPA's failure to consider this data in an updated BACT determination before reissuing the Peabody permit is clear error.

B. IEPA Did Not Offer Reasoned Explanation Why It Rejected USEPA's Haber Report

In support of its comments urging IEPA to consider stronger NOx BACT limits, Petitioners provided as part of their comments a report prepared by Mr. Matt Haber, a USEPA BACT expert. See Dr. Fox Comments, Pet. Ex. 5 (at Ex. 2). In April 2002 Mr. Haber prepared a report entitled Best Available Control Technology for the Baldwin Generating Station, Baldwin, Illinois (April 2002) ("Haber Report") as part of the ongoing Federal government lawsuit against Illinois Power regarding NSR violations at its Baldwin power plant. The Baldwin Power Plant is located in Randolph County, Illinois, approximately twenty miles west of the site of the proposed Peabody facility.

Mr. Haber was trained as a civil engineer at Stanford University and since 1980 has worked in EPA Region 9's Air Division. See Haber Report, Dr. Fox Comments, Pet. Ex 5 (at Ex 2, at D-1). Mr. Haber's report summarizes his impressive credentials.

In his report Mr. Haber conducted a BACT analysis for each of Baldwin's three 585 MW coal-fired boilers. He concluded that BACT for NOx should be 0.020-0.040 lb/MMBtu, over a 3-hr averaging time. Haber Report at 3. This report was signed and submitted under oath in the U.S. District Court in the Southern District of Illinois. His proposed NOx rate is significantly lower than the limits included in the final Peabody permit which has a NOx rate of 0.07 lb/MMBtu over a 30-day averaging time. Revised Permit, Pet. Ex. 1 at Attach 1, Table I.

For the same reasons the U.S. Department of Justice put forward Mr. Haber as the government's chief BACT expert in a high-profile NSR enforcement action, Petitioners submitted his report to IEPA as strong evidence that more stringent BACT limits were feasible and achievable. This report may be the most definitive, up-to-date, and thorough USEPA statement as to what constitutes BACT for a coal-fired power plant.

The Haber report has been relied on by USEPA in subsequent new coal plant PSD permitting proceedings. For example, in June 2004 USEPA Region 9 advised the Nevada Department of Environmental Protection that Mr. Haber's report sets the bar for BACT. See June 18, 2004 email attached as Pet. Ex. 45 ("[Nevada Bureau of Air Pollution Control] discussed the Matt Haber BACT limit recommendations with EPA. EPA said that it is possible that limits higher than the Haber recommendation may be acceptable. However, the BACT analysis must adequately demonstrate that any proposed limits higher than Haber's are justifiable.").

Pointing to the Haber report Petitioners urged IEPA to lower significantly the NOx limit for Peabody's proposal. IEPA rejected the Haber report out of hand. This report is useless, said IEPA, because his assessment "reflects ideal performance of the low-NOx combustion controls and SCR systems on the boilers, without any initial safety factor." Pet. Ex. 12, #133. Both of these claims are incorrect.

Mr. Haber based the NOx limit of 0.015 lb/MMBtu on an overall NOx control efficiency (uncontrolled boiler outlet to outlet of SCR) of 95 percent (0.30 to 0.015 lb/MMBtu). Haber Report at 50.[56] His calculations were not based on "ideal

[56] The NOx emission limit of 0.015 lb/MMBtu is based on the use of low NOx burners capable of achieving 50 percent NOx control, an SCR capable of achieving 90 percent NOx control, and an optimization system capable of achieving 40 percent NOx control. Haber Report at 3, 42, 50. The "ideal" combined control efficiency from these three control options is 98 percent: (1-0.5)(1-0.9)(1-0.6)(100) = 98%. However, Mr. Haber did not take any credit for the optimization system. Thus, the limit is actually

performance." Mr. Haber stated that for the years that he conducted his BACT determinations (1988 and 2002), SCR controls had "achieved" NOx control efficiencies of 67 to 92 percent. Haber Report at 36, 49, 50. In 2002 SCR was capable achieving "perhaps as high as 95%." Id. at 43. Optimization systems have achieved NOx reductions as high as 40 percent. Id. at 42. Low NOx burners have achieved 50 percent. Id. at 49.

IEPA also dismisses the report with the claim that "Mr. Haber indicates that the BACT limit that is actually achievable for NOx [0.04 lb/MMBtu] may actually be two and a half times a value that is initially being recommended [0.015 lb/MMBtu]." Pet. Ex. 12, #133. This is misleading. Mr. Haber clearly explained why he allowed an adjustment: "I would provide this flexibility because this is a retrofit, and therefore more difficult." Pet. Ex. 12, p. 52. "[S]ince this is a retrofit, rather than a new powerplant, it may be difficult to achieve the lowest levels reached by new plants"). Retrofits represent the worst-case for NOx BACT because the SCR must be designed to accommodate the existing plant. Pet. Ex. 5, Sec. II.C.2. Peabody's proposal is a new facility that would not be constrained by any of these issues. IEPA rejected the NOx limits in the Haber report without a reasoned and accurate basis. This is clear error.

XX. The New Startup and Shutdown Provisions Are Plainly Unlawful

Emissions can be higher during startups and shutdowns (less than 50% load) because the pollution control equipment may not operate at peak efficiency. For this reason Petitioners submitted comments urging IEPA to establish BACT limits that apply during periods of startup and shutdown. See Dr. Fox Comments, Pet. Ex. 5 at VI. IEPA

based on a control efficiency of 95%: (1-0.5)(1-0.9)(100) = 95%. The corresponding safety factor, built into the calculation by assuming no control for the optimization system, is: (100-95)/(100-98) = 2.5.

apparently agreed that BACT limits must cover periods of startup and shutdown and revised the final permit. However, in making changes, IEPA made the problem worse, not better. The new startup/shutdown limits that do not meet minimum Clean Air Act requirements.

A. Startup and Shutdown Excluded From BACT Limits.

The final permit contains BACT concentration limits in pounds per million Btus ("lb/MMBtus") for several pollutants based on averaging times that are less than 24 hours. These include filterable PM (Condition 2.1.2.b.i.A), total PM10 (Condition 2.1.2.b.ii.B), volatile organic matter (Condition 2.1.2.b.v), sulfuric acid mist (Condition 2.1.2.b.vi), and fluorides (Condition 2.1.2.b.vii). Permit, Pet. Ex. 1. Each of these conditions contains a blanket exemption from the BACT limits during periods of startup and shutdown. Ibid. ("This limit shall not apply during period of startup and shutdown as addressed by Condition 2.1.2.e.").

Permit Condition 2.1.2.e exempts periods of startup and shutdown that are part of normal operation. This is prohibited under the CAA. See In re Tallmadge Energy Center, PSD Appeal No. 02-12 (EAB May 21, 2003) slip op. at 24 ("BACT requirements cannot be waived or otherwise ignored during periods of startup and shutdown"); RockGen, 8 E.A.D. at 553-55 (holding that PSD permits may not contain blanket exemptions allowing emissions in excess of BACT limits during startup and shutdown); In re Indeck-Niles Energy Center, PSD Appeal No. 04-01 (EAB September 30, 2004) at 16, note 9 (same).

Condition 2.1.2.e also purports to replace the BACT limit with a general duty clause to follow good air pollution control practices. The general duty clause did not arise out of a top-down BACT analysis and is no substitute for specific BACT limits.

The general duty clause does not explain how emissions would be minimized during startups and shutdown, but rather requires a "startup, shutdown and malfunction plan" and "written maintenance procedures," which are not in the record and are not approved through the necessary Part 124 process. See Pet. Ex. 1, Conditions 1.3.b and 2.1.2.e.

Secondary BACT limits can be used to limit startup and shutdown emission, but "such limits must be made part of the PSD permit and justified as BACT." Tallmadge, slip op. at 28. The record contains no evidence that IEPA considered ways to eliminate or reduce excess emissions during startup and shutdown. Instead the crucial emissions elimination/reduction analysis has been assigned to Peabody, to be conducted in the future, and without any approval whatsoever. This approach does not pass legal muster for the PSD preconstruction program. Tallmadge, slip op at 26-27; RockGen, 8 E.A.D. 536, 551-555. IEPA must describe the design, control, and methodology, or other changes that are appropriate for inclusion in the permit to minimize allowed excess emissions during startup and shutdown. Tallmadge, slip op. at 27. This was not done.

The record contains no BACT analysis that supports these limits. Further, these limits are not characterized by the permit or permitting file as BACT limits. These limits are found in a section of the permit called "Emission Limits," while the BACT limits are in a section of the permit called "Control Technology Determination." Compare Permit, Pet. Ex. 1, Conditions 2.1.2 and 2.1.7.

IEPA, apparently recognizing this flaw, added a note to the final permit stating that these Table I limits "shall serve as "secondary limits" for purposes of BACT, with compliance determined based on engineering calculations and analysis." Pet. Ex. 1, Condition 2.1.2.e, note. However, the permit limits contain no such language, nor does IEPA's own summary of the BACT limits. Thus, the alternate startup and shutdown

limits could be modified without triggering the PSD requirement for public notice, review, and appeal. The permit should be remanded to IEPA to make a formal BACT determination for startup and shutdown limit and to modify the permit to clearly indicate that the limits are BACT limits.

In addition, IEPA indicates that emissions will not be tested during these periods and compliance will be demonstrated using engineering calculations. Pet. Ex. 12 #184 ("it is not intended that emissions testing be attempted for purpose of measuring emissions during startup or shutdown"); Pet. Ex. 1, Condition 2.1.2.e, note. These limits must be met on a "continual basis at all levels of operation" and must be enforceable as a practical matter. NSR Manual at B.56. The proposed startup and shutdown limits in Condition 2.1.7 are not practically enforceable because testing is not required to demonstrate compliance.

An agency does not have the discretion to waive testing to determine compliance with BACT limits unless a demonstration is made on the record that testing is not feasible. The hierarchy for specifying monitoring to determine compliance is: (1) continuous direct measurement where feasible; (2) initial and periodic direct measurement where continuous monitoring is not feasible; (3) use of indirect monitoring, e.g., surrogate monitoring, where direct monitoring is not feasible; and (4) equipment and work practice standards where direct and indirect monitoring are not feasible. NSR Manual at I.3. See also NSR Manual at H.10. IEPA has offered no reasoned analysis why emission testing cannot occur during startups and shutdowns.

Finally, IEPA contemplates that startup/shutdown emissions will be higher than the BACT limits, presumably this is why it exempted these emissions from the BACT limits. IEPA must, in these circumstances, "specify and carefully circumscribe in the

permit the conditions under which [Prairie State] would be permitted to exceed otherwise applicable emission limits and establish that such conditions are nonetheless in compliance with applicable requirements, including NAAQS and increment provisions." RockGen, 8 E.A.D. 536, 554. See also Tallmadge, slip op. at 28. The NAAQS modeling did not include startup and shutdown emissions.

In sum, IEPA's startup and shutdown provisions are clearly erroneous because they exempt Peabody from BACT limits during periods of startup and shutdown and replace BACT limits with other non-BACT limits. The permit must be remanded with instructions to IEPA to cure these serious defects.

B. Alternate Compliance Procedures for SO2 and NOx Redefine BACT

The final permit adds an alternate compliance procedure for both SO2 and NOx that undercuts the BACT limits for these two pollutants. The SO2 and NOx BACT limits are based on compliance procedures set forth in 40 CFR 60.48a. Pet. Ex. 1, Conditions 2.1.2.b.ii.A and 2.1.2.b.iii. The compliance procedure is part of the BACT limit (NSR Manual at B.56) and ultimately determines the magnitude of the limit.

The final permit allows a different mass-based compliance procedure to be substituted during any 30-day period that includes a startup. This substitution is made because the alternate procedure calculates a lower emissions rate, thus allowing continuous compliance when startups, which increase emissions, occur. Pet. Ex. 12 #184. However, this alternate procedure also allows a less stringent compliance method to be used to determine compliance for an entire 30 days, rather than just the day or period when the startup occurred.

A BACT limits consists of two parts, the emission limit and compliance procedures. NSR Manual at B.56. The final permit changes the compliance procedures

without performing a new BACT analysis or explaining the effect of the change on the BACT limit. The use of an alternate compliance procedure that calculates lower emissions than assumed in the original BACT analysis undercuts the BACT determination and thus is clear legal error. The permit should be remanded to require that IEPA strike this new alternative compliance language because it violates BACT or explain how such alternatives are consistent with a reasoned BACT analysis.

C. The CO Startup Limit is Not Practically Enforceable

The permit sets a separate limit for CO for startup and shutdown of 893 lb/hr, averaged over a rolling 24-hour period. Pet. Ex. 1, Condition 2.1.2.b.iv.B. This condition is ambiguous and thus not practically enforceable.

For a startup, the 24-hour period begins with the initial firing of fuel in the boiler. For shutdown, the 24-hour period ends with the shutdown of the boiler. The permit does not explain when a startup ends or a shutdown begins, creating ambiguity.

The startup emissions could vary substantially depending upon whether startup is assumed to end at 50% load or a higher load, say 100% load or whether shutdown is assumed to start at 100% or a lower load. The higher load at either end would allow more hours to average out the very high CO emissions that occur during low load operation during both startup and shutdown. The startup/shutdown emissions also would vary substantially depending upon whether the compliance period is a full 24 hours, or just the duration of the startup or shutdown, and how emissions during non-startup or shutdown periods with a 24 hour period are handled. If, for example, the compliance periods is 24 hours and startup emissions are assumed to be zero for all hours after the completion of startup through the end of the 24-hour period, startup emissions would be much lower than if actual emissions during non-startup hours were used.

This condition is not practically enforceable because it does not state when startup ends or shutdown begins, whether the compliance period must be a full 24 hours or some shorter period, e.g., the actual length of a startup, or how emissions are calculated if startup lasts less than 24 hours. Thus, this condition is ambiguous, not practically enforceable, and should be remanded to clarify these flaws.

XXI. Limits Must Be Achievable, Not Achieved

IEPA states that an emission limit or control efficiency must have been achieved over a long period before it can be considered in a BACT determination. See, e.g., Response, Pet. Ex. 12 #111 (rejecting greater than 98% control because the data are not long term); #114 (rejecting greater than 98% control because it does not demonstrate "achievement"); #136 (rejecting NOx CEMS data for Montour because it does not provide an adequate basis to assess long-term performance.); #137 (rejecting NOx CEMS data because it does not prove "lower emission rates can consistently be achieved."). IEPA fundamentally misinterprets BACT, which is a technology-forcing regulation.

The definition of BACT requires that emission rates be "achievable." 40 C.F.R. § 52.21(b)(12). Congress' intent to continuously improve pollution control technology is achieved by setting permit limits at the maximum degree of reduction "achievable." IEPA seeks to rewrite "achievable" to say "achieved." The term "achieved" means accomplished in the past. "Achievable" means the potential to achieve in the future. See e.g., Alabama Power v. US EPA, 636 F.2d 323, 372 (D.C. Cir. 1980).

An "achievable" BACT limit is only constrained by energy, environmental, and economic impacts and other costs. 40 C.F.R. § 52.21(b)(12). It is not necessary that the limit has been proven by existing units over the long term. Had that been Congress' intent in drafting the Clean Air Act, it would have defined BACT as the degree of

reduction being achieved in practice at similar sources. The emission rate need only be "achievable," based on reasoned engineering judgment. Thus, the permit limits for each of the regulated pollutants should be remanded to IEPA with instructions for the agency to reconsider Petitioners' evidence that much lower emission rates are "achievable," within the meaning of BACT.

CONCLUSION

For these reasons we respectfully urge the Board to review and remand the Peabody PSD permit. Respectfully submitted, this 8th day of June, 2005,

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PETITIONERS' EXHIBITS

1) Revised Permit (April 28, 2005)
2) Draft Peabody Permit (undated)
3) Hearing Transcript (March 22, 2004)
4) Robert Ukeiley Comments (June 17, 2004)
5) Dr. Phyllis Fox Comments (June 21, 2004)
6) American Lung Assn., ABC, LCCA, PRN, SC Comments (Aug. 23, 2004)
7) Clean Air Task Force Comments (August 26, 2004)
8) Valley Watch Comments (July 26, 2004)
9) Dr. Phyllis Fox Supplemental Comments (August 26, 2004)
10) Department of Interior letter to IEPA concluding adverse impacts (May 14, 2004).
11) IEPA letter re: availability of final permit & responsiveness summary (January 21, 2005)
12) IEPA's revised Responsiveness Summary (April, 2005)
13) IEPA letter to Interior concluding no adverse impact (January 13, 2005)
14) Declaration of Bruce Nilles (February 22, 2005)
15) Press Release, Office of Governor Blagojevich announcing funding for PSGS (February 7, 2005)
16) Peabody Letter to IEPA requesting permit condition to use other coal sources (August 27, 2004)
17) IEPA website for Peabody permitting documents (undated)
18) IEPA Letter to USEPA Regional Administrator requiring consideration of IGCC (March 19, 2003).
19) WE Energies Elm Road Air Pollution Control Permit (January 15, 2004)
20) Letter from State of New Mexico to Mustang Energy requiring consideration of IGCC (December 23, 2002)
21) New Mexico letter to USEPA Region 9 regarding failure of Steag Power Plant to consider IGCC (October 8, 2004)
22) Decision of the Board of Environmental Review, Montana in the matter of the Air Quality Permit for Roundup (June 2003)
23) NESCAUM Amicus Brief, We Energies Elm Road proceeding (Nov. 30, 2004)
24) The National Coal Council Report, Increasing Electricity Availability from Coal in the Near-Term (May 2001)
25) Matt Haber Reports, Best Available Control Technologies for the Baldwin Generating Station, Baldwin, Illinois (April 2002) & (Oct. 2002).
26) USEPA Region 5 letter to Indiana DEM regarding permitting issues associated with new 8-hour ozone standard (February 26, 2004)
27) Peabody updated PSD application (October 11, 2002)
28) Carmeuse Chemicals comments on draft permit (April 20, 2004)
29) IEPA letter to FWS regarding new permit limits (December 22, 2004)
30) FWS memo discussing its concerns and IEPA responses (January 27, 2004)
31) Thoroughbred Generating Company letter to Kentucky Cabinet agreeing to PM/PM10 limit of 0.018 lbs/mmBtu (August 11, 2004).
32) SFA Pacific, Evaluation of IGCC for Peabody (May 11, 2003).
33) Pages from Peabody's modeling (undated)
34) IDNR Final Biological Opinion, Nov. 1, 2005

35) Letter from Colin Kelly to Donald Sutton (Oct 11, 2002) 5 pp
36) Email from Laurel Kroack to Dianna Tickner (Sept 9, 2004) 1 page
37) Sierra Club FOIA request (May 17, 2005) (1 page) and IEPA Response (May 24, 2005) (2 pages)
38) Email from Keith Shank to Todd Rettig (Nov 11, 2004) (1 page)
39) Amicus Brief of EPA Region V and EPA Office of Air and Radiation In Response to the Board's Order to Show Cause In re West Suburban Recycling & Energy Center (July 30, 1996)
40) Response of EPA Region II and EPA Office of Air and Radiation to Mr. Arana's Petition for Review, In re Ecoelectrica (Dec. 24, 1996)
41) Amicus Brief of EPA Region V and EPA Office of Air and Radiation In Response to RURAL's Amended Petition for Review and the Responses of WDNR and RockGen (June 11, 1999)
42) Gregory Foote, Considering Alternatives: The Case for Limiting CO2 Emissions From New Power Plants Through New Source Review, 34 ELR 10642 (July 2004)
43) IEPA Revised Permit Memorandum (April 27, 2005)
44) Yasuhiko Shimogama, Commercial Experience of the CT-121 FGD Plant for 700 MW Shinko-Kobe Electric Power Plant (undated) (17 pages)
45) Email from Matthew Burle to Glen King (June 18, 2004) (2 pages)
46) Memo from Rajdeep Bhangu to William Nuver, Source Test Review Northampton Generating Company, (July 19, 2001) (6 pages)
47) Letter from Bruce Nilles, Sierra Club, to Robb Layman, IEPA (Apr. 13, 2005) (2 pages)
48) Letter from Bruce Nilles, Sierra Club, to Robb Layman, IEPA (Apr 27, 2005) (46 pages)
49) USEPA NOx CEMS Data (1 page)
50) United Mineworkers Comments prepared by Dr. Paul (29 pages)
51) IEPA EJ Memo (April 20, 2005) (4 pages)
52) USFWS Coal Washing Memorandum (January 28, 2004) (4 pages)
53) IEPA Coal Washing Memorandum (April 28, 2005) (17 pages)