IN RE INDECK-ELWOOD, LLC

PSD Appeal No. 03-04

ORDER DENYING REVIEW IN PART AND REMANDING IN PART

Decided September 27, 2006

Syllabus

On October 10, 2003, the Illinois Environmental Protection Agency ("IEPA") issued a federal prevention of significant deterioration ("PSD") permit to Indeck-Elwood, LLC ("Indeck") for the construction of a coal-fired steam electric generating station. The facility would be located in Elwood, Illinois, near the Midewin Tallgrass Prairie (the "Midewin") – a national prairie preserve. The American Lung Association of Metropolitan Chicago, Citizens Against Ruining the Environment, the Clean Air Task Force, Lake County Conservation Alliance, and the Sierra Club (collectively "Petitioners") filed a timely petition for review with the Environmental Appeals Board ("Board") opposing the IEPA-issued PSD permit on various grounds.

Petitioners argue that: (1) IEPA clearly erred in including Source-Wide Permit Condition 9, which allows Indeck to construct a power plant with less capacity than addressed by the permit application; (2) IEPA and Indeck failed to conduct a proper assessment of impairment to soils and vegetation that would occur as a result of the proposed facility; (3) the permit's sulfur dioxide ("SO_2") limits do not reflect best available control technology ("BACT") because Indeck did not credibly consider the use of low-sulfur coal; (4) the permit unlawfully allows Indeck to burn any "solid fuel" without defining such term or considering alternative fuels in its BACT analysis; (5) the permit provision exempting all shutdown, startup, and malfunction ("SSM") events from short-term emission limits is unlawful; (6) Indeck's proposed particulate matter ("PM") emissions limit does not reflect BACT; (7) the permit's nitrogen oxide ("NO_x") limit does not reflect BACT; (8) IEPA unlawfully failed to set a BACT limitation for fluorides; and (9) IEPA erroneously concluded that it has no obligation to consider alternative locations for the proposed facility. In addition, Petitioners raise several challenges relating to the Endangered Species Act ("ESA") as it applies to this proceeding.

Held: The Board remands the permit on the following issues: the inclusion of Source-Wide Condition 9 (issue #1 above); IEPA's soils and vegetation analysis (issue #2 above); the permit's substitution of work and operational practices for BACT numeric limits during SSM events (issue #5 above); and the permit's PM emissions limit and the absence of a limitation for condensable PM (issue #6 above). On all other issues, review is denied. The Board holds as follows:

(1) *Source-Wide Condition 9:*

Condition 9 allows the construction, without IEPA's prior approval, of a power plant that has less capacity than that addressed in Indeck's application. The addition of this permit condition after the close of the public comment period changed the substance of the PSD permit by allowing for construction of a facility physically different from the one originally permitted, which may potentially have different emission characteristics. Under these circumstances, the Board concludes that IEPA should have reopened or extended the comment period to subject this condition to public comment. The permit is therefore remanded. On remand IEPA must either remove Condition 9 from the permit or reopen the record and provide the public with an opportunity to comment on this issue and respond to any such comments received.

(2) *Soils and Vegetation Analysis:*

In view of the proximity of Indeck's facility to a national vegetation preserve, and the lack of a reasoned analysis in IEPA's response to comments addressing concerns raised during the public comment period regarding the adequacy of both Indeck's soils and vegetation analysis and IEPA's consideration of impacts to the Midewin, the permit is remanded on this issue. On remand IEPA must either: (1) augment its response to comments to clarify how its decision comports with the requirements for a more rigorous analysis and addresses the comments that were received on this issue, or (2) perform or consider analysis not presently in the record sufficient to address the concerns expressed in the Board's decision.

(3) *Substitution of Work and Operational Practices for BACT Numeric Limits During SSM Events:*

Unit-Specific Condition 1.2.b and Table I exempt Indeck from compliance with short-term emission limitations applicable to the boilers of the proposed facility. IEPA claims that, contrary to Petitioners' suggestion, the permit does not waive BACT limits during SSM events. Rather, IEPA states that the permit establishes work practices and operational BACT standards that operate in lieu of numerical limits in such circumstances. According to IEPA, it is technically infeasible for Indeck to comply with the numerical emission limits set as BACT during SSM events, and, under such circumstances, 40 C.F.R. § 52.21(b)(12) allows the permit issuer to substitute work practices and operational standards for numerical limits. However, the Board concludes the circumstances considered by IEPA fall outside the scope of section 52.21(b)(12). That section allows substitution of numeric BACT limits only when "technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible." Because IEPA does not adequately invoke infeasibility in the application of measurement methodologies, and because the record lacks analysis comparing the emission reductions expected from the implementation of work practices and operational standards with those reductions that could be expected from the application of numeric limits, as contemplated by section 52.21(b)(12), the Board remands the permit on this issue for further analysis consistent with its opinion.

(4) *PM and Condensable PM:*

Because the record does not contain a sufficient explanation of why the PM limit adopted in the final permit, rather than the more stringent PM limits utilized for other facilities cited by Petitioners, constitutes BACT, the permit is remanded. On remand, IEPA must either provide further explanation and analysis supporting adoption of the permit's

PM limitation or adjust the PM limit, if necessary, to appropriately reflect BACT. The Board also remands the permit to IEPA to reconsider whether a PM limitation, including a limitation for condensable particulate matter is appropriate, and if so, to modify the permit accordingly.

(5) *Other Issues:*

The Board denies review on all other issues, including Petitioners' permit challenges relating to the ESA. In regard to Petitioners' ESA challenges, the Board holds that: (1) ESA consultation is required in the present setting where the permitting decision may affect listed species or designated critical habitat; (2) although, as a technical matter, the ESA consultation in this case, which took place during the pendency of this appeal, met minimum legal standards, the Board notes that it may be prudent for the Agency to move the ESA consultation process further up the permit development chain where there is more flexibility to make and implement any ESA-related permit modifications; (3) the ESA, the Clean Air Act, and the relevant regulations do not provide for public participation or public comment on the ESA consultation process as part of a PSD permit proceeding; and (4) the Board denies Petitioners' request to amend the Petition to raise substantive questions regarding the quality of the ESA analysis and decisionmaking because such challenges belong in a different forum.

Before Environmental Appeals Judges Scott C. Fulton, Edward E. Reich, and Kathie A. Stein.

Opinion of the Board by Judge Fulton:

On October 10, 2003, the Illinois Environmental Protection Agency ("IEPA") issued a federal prevention of significant deterioration ("PSD") permit to Indeck-Elwood, LLC ("Indeck"), under section 165 of the Clean Air Act ("CAA" or "Act"), 42 U.S.C. § 7475, for the construction of a 660-megawatt coal-fired steam electric generating station. The proposed facility is to be located in the Deer Run Industrial Park in Elwood, Illinois, next to the Midewin National Tallgrass Prairie, a national prairie preserve. A delegation agreement between Region 5 of the U.S. Environmental Protection Agency ("EPA" or "Agency") and the State of Illinois authorizes IEPA to make PSD permit decisions. *See* 40 C.F. R. § 52.21(u); Prevention of Significant Deterioration – Delegation of Authority to State Agencies, 46 Fed. Reg. 9580, 9582 (Jan. 29, 1981) (delegating federal PSD program authority within Illinois to the Illinois Environmental Protection Agency). Because IEPA exercises delegated federal authority when it issues PSD permits, such permits are considered EPA-issued permits and may be appealed to the Environmental Appeals Board ("Board") in accordance with 40 C.F.R. § 124.19.

On November 17, 2003, the Board received a petition for review filed by the American Lung Association of Metropolitan Chicago, Citizens Against Ruining the Environment, the Clean Air Task Force, Lake County Conservation Alliance, and the Sierra Club (collectively "Petitioners"). On February 3, 2004, the Board granted a request by Petitioners to amend their petition. The Amended Petition advances several arguments against the IEPA-issued permit, and requests that

the Board remand the permit for additional proceedings related to these issues. For the reasons set forth below, we deny the Amended Petition in part and remand the permit in part for further proceedings in accordance with the directives provided in this decision.

I. *BACKGROUND*

A. *Statutory and Regulatory Background*

1. *National Ambient Air Quality Standards*

Congress enacted the CAA to, among other things, "protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and productive capacity of its population." CAA § 101(b)(1), 42 U.S.C. § 7401(b)(1). As one means of achieving this objective, Congress enacted the CAA Amendments of 1970, which, among other things, directed the EPA to create a list of those pollutants that pose a danger to public health and welfare and result from numerous or diverse mobile or stationary sources, and for which EPA had not previously issued air quality criteria. CAA § 108(a), 42 U.S.C. § 7408(a).[1] Congress then directed EPA to issue air quality criteria for any pollutant on the list, and to promulgate regulations establishing national ambient air quality standards ("NAAQS") for all criteria pollutants.[2] *Id.*; CAA § 109(a), 42 U.S.C § 7409(a). Currently, there are six criteria pollutants with corresponding NAAQS: (1) sulfur oxides (measured as sulfur dioxide ("SO_2")); (2) particulate matter ("PM");[3] (3) carbon monoxide("CO"); (4) ozone (measured as "VOCs");[4]

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[1] Pursuant to section 108(a)(2) of the CAA, "[a]ir quality criteria for an air pollutant shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities." 42 U.S.C § 7408(a)(2). The pollutants for which EPA has established air quality criteria are commonly referred to as "criteria pollutants."

[2] The NAAQS are air quality standards for particular pollutants "measured in terms of the total concentration of a pollutant in the atmosphere." U.S. EPA Office of Air Quality Planning and Standards, New Source Review Workshop Manual at C.3 (Draft Oct. 1990) (hereinafter referred to as "NSR Manual").

[3] Particulate matter or "PM" is "the generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes." *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 181 (EAB 2000) (quoting 62 Fed. Reg. 28,652, 38,653, (July 18, 1997)). Particulate matter with an aerodynamic diameter of ten microns or less is referred to as "PM_{10}."

[4] Ground-level ozone forms in the ambient air through chemical reactions involving oxygen, volatile organic compounds ("VOCs"), nitrogen oxides ("NO_x"), and sunlight; therefore, controls designed to reduce ambient concentrations of ozone usually target emissions of VOCs and/or NO_x. *See*

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(5) nitrogen dioxide ("NO_2");[5] and (6) lead. 40 C.F.R. § 50.4-.12.

The Act further directs EPA to designate geographic areas within states, on a pollutant by pollutant basis, as being either in attainment or in nonattainment with the NAAQS, or as being unclassifiable. CAA § 107(d), 42 U.S.C. § 7407(d). An area is designated as being in attainment with a given NAAQS if the concentration of the relevant pollutant in the ambient air within the area meets the limits prescribed by the applicable NAAQS. CAA § 107(d)(1)(A)(ii), 42 U.S.C. § 7407(d)(1)(A)(ii). Unclassifiable areas are those areas "that cannot be classified on the basis of available information as meeting or not meeting the [NAAQS]." CAA § 107(d)(1)(A)(iii), 42 U.S.C. § 7407(d)(1)(A)(iii). Nonattainment areas, on the other hand, are those areas with ambient concentrations of a criteria pollutant that do not meet the requirements of the applicable NAAQS. CAA § 107(d)(1)(A)(i), 42 U.S.C. § 7407(d)(1)(A)(i).

One of the key programs designed to achieve compliance with the NAAQs is the New Source Review ("NSR") program. Under the NSR program any person planning the construction of a new major emitting facility or major modification to a major emitting facility must obtain,[6] regardless of the classification of the area, an air pollution permit before commencing construction. The NSR program establishes different requirements based on the classification of the area. A new major emitting facility seeking a construction permit in an area deemed as "attainment" or "unclassifiable," is subject to the PSD provisions of the CAA found in 42 U.S.C. §§ 7470-7492. Construction in an area classified as nonattainment is subject to the nonattainment provisions of the Act found in 42 U.S.C. §§ 7501-7515. This appeal concerns construction in an area subject to the PSD provisions of the CAA; we therefore will not elaborate further on the nonattainment provisions of

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http://www.epa.gov/oar/oaqps/gooduphigh/ozone.html#1; 40 C.F.R. §§ 51.100(s), 52.21(b)(30) (defining VOCs).

[5] Nitrogen dioxides are generally identified in terms of all oxides of nitrogen ("NO_x"). *See Ala. Dep't of Envl. Conservation v. EPA*, 540 U.S. 461, 469 n.1 (2004) ("The term nitrogen oxides refers to a family of compounds of nitrogen and oxygen. The principal nitrogen oxide component present in the atmosphere at any time is nitrogen dioxide. Combustion sources emit mostly nitric oxide, with some nitrogen dioxide. Upon entering the atmosphere, the nitric oxide changes rapidly, mostly to nitrogen dioxide.") (quoting EPA, Prevention of Significant Deterioration for Nitrogen Oxides, 53 Fed. Reg. 40,656 (1988)).

[6] A "major emitting facility" is any of certain listed stationary sources (including fossil-fuel fired steam electric plants of more than 250 million British Thermal Units per hour ("BTU/hr") heat input) which emit, or have the potential to emit, 100 tons per year ("tpy") or more of any air pollutant, or any other stationary source with the potential to emit at least 250 tpy of any air pollutant. CAA § 169(1); 42 U.S.C. § 7479(1). *See also* 40 C.F.R. § 52.21(b)(1)(i) (defining "major stationary source"); 40 C.F.R. § 52.21(b)(2)(i)(defining "major modification").

the Act.[7]

2. *The Prevention of Significant Deterioration (PSD) Program*

Congress enacted the PSD provisions as part of the CAA Amendments of 1977, in part, to "protect public health and welfare * * * , notwithstanding attainment" of a NAAQS and "to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources."[8] CAA § 160(1), (3), 42 U.S.C. § 7470(1), (3). Typically, state or local permitting authorities implement the PSD program, either according to a PSD program that EPA has approved as part of a State Implementation Plan ("SIP") required under CAA § 110(a), or pursuant to an agreement whereby EPA delegates federal PSD program authority to the State, as is the case in Illinois.

A permitting authority may not issue a PSD permit unless the applicant demonstrates compliance with the substantive PSD requirements. Specifically, the applicant must perform a thorough analysis of the air quality impacts of the proposed construction or modification. 40 C.F.R. § 52.21(k), (m).[9] Additionally, with respect to regulated pollutants[10] that the new or modified facility will emit in significant quantities,[11] the applicant must demonstrate that the facility will comply with emission limitations that reflect application of the best available control technology ("BACT"). *Id*. at § 52.21(j)(3). Finally, the applicant must prepare addi-

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[7] The Administrator has delegated authority to this Board to issue final decisions in PSD permit appeals filed under 40 C.F.R. part 124. *See* 40 C.F.R. § 124.2(a).

[8] Other objectives include protecting national parks, wilderness areas, monuments, seashores, and other special areas, and ensuring that permit decisions are made only after careful evaluation of all the consequences of such decisions and with adequate opportunities for public participation. CAA § 160(2), (5), 42 U.S.C. § 7470(2), (5).

[9] Under 40 C.F.R. § 52.21 (k), "[t]he owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of: (1) any national ambient air quality standard in any air quality control region; or (2) any applicable maximum allowable increase over the baseline concentration in any area." 40 C.F.R. § 52.21(k). Pursuant to 40 C.F.R. § 52.21(m), each permit application for a major stationary source, such as the facility Indeck proposes, must include in its application "an analysis of ambient air quality in the area that [the source] would affect for * * * each pollutant that [the source] would have the potential to [e]mit in a significant amount." 40 C.F.R. § 52.21(m)(1)(i)(a).

[10] The regulations define regulated pollutants (or regulated NSR pollutants) as any pollutant subject to regulations under the CAA (i.e., pollutants for which a NAAQS has been promulgated, pollutants subject to standards promulgated under section 111 of the CAA, and Class I or Class II substances subject to title VI of the CAA). 40 C.F.R. § 52.21(b)(50).

[11] The PSD regulations define significant quantities as follows:
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tional impact analyses assessing the impact of air, ground, and water pollution on soils, vegetation, and visibility caused by any increase in emissions from the proposed facility. *Id.* at § 52.21(o).

We discuss each of these requirements in more detail below.

a. *Air Quality Analysis*

The main purpose of the air quality impacts analysis is to "demonstrate that the new emissions emitted from a proposed major stationary source * * * , in conjunction with other applicable emissions from existing sources * * * , will not cause or contribute to a violation of any applicable NAAQS or PSD increment." U.S. EPA Office of Air Quality Planning and Standards, New Source Review Workshop Manual at C.1 (Draft Oct. 1990) (hereinafter referred to as "NSR Manual"); 40 C.F.R. § 52.21 (k). The NAAQS, as noted earlier,[12] are "maximum concentration 'ceilings' measured in terms of the total concentration of a pollutant in the atmosphere." NSR Manual at C.3. PSD increments are maximum allowable increases in pollutant concentration over baseline concentrations. *Id*.

In conducting air quality analyses, applicants for PSD permits ordinarily employ air quality models to predict the impacts on ambient air of pollutants subject to PSD review. *In re South Shore Power, L.L.C.*, PSD Appeal No. 03-03, at 3 (EAB June 4, 2003) (Unpub. Order); *see also* 40 C.F.R. § 52.21(*l*)(1) ("[a]ll estimates of ambient concentrations required under this paragraph shall be based on applicable air quality models, data bases, and other requirements specified in Ap-

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Pollutant	Emissions Rate
Carbon Monoxide (CO)	100 tpy
Nitrogen Oxides (NO_x)	40 tpy
Sulfur Doxide (SO_2)	40 tpy
Particulate Matter (PM)	25 tpy of PM emissions; 15 tpy of PM_{10} emissions
Ozone (measured as volatile organic compounds (VOCs))	40 tpy
Lead	0.6 tpy
Flourides	3 tpy
Sulfur Acid Mist	7 tpy
Hydrogen Sulfide (H_2S)	10 tpy

40 C.F.R. § 52.21(b)(23)(i).

[12] *See supra* note 2.

pendix W of part 51"). Air quality models ordinarily take into account such factors as a proposed facility's geographical, topographical, and meteorological setting in order to predict impacts on ambient air quality. *See generally* 40 C.F.R. pt. 50, App.; 40 C.F.R. § 52.21(k)(1).

b. *Best Available Control Technology*

As noted above, any major stationary source subject to PSD requirements must conduct a BACT analysis for each regulated pollutant. *See* CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4). The CAA defines BACT as:

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

CAA § 169(3), 42 U.S.C. § 7479(3); *see also* 40 C.F.R. § 52.21(b)(12). The determination of BACT is one of the central features of the PSD program. *See In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 123-124 (EAB 1999) ("*Knauf I*").

EPA's NSR Manual recommends a standardized "top-down" process for BACT determinations, consisting of five basic steps.[13] *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 135 (EAB 1994). The "top-down" process begins with the identification of all available emission control options.[14] NSR Manual at B.5; *Knauf I* at 129-130. Control options are processes, methods, systems, and techniques for reducing emissions, including, among other things, clean fuels and innovative fuel combustion techniques. *See* CAA § 169(3); 42 U.S.C. § 7479(3). The second step involves consideration of the technical feasibility of the available

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[13] While the NSR Manual is not accorded the same weight as a binding Agency regulation, the Board has looked to it in construing BACT because it reflects the Agency's thinking on certain PSD issues. *See Ala. Dep't of Envtl. Conservation v. EPA*, 540 U.S. 461, 476 n.7 (2004); *see also In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 135 n.8 (EAB 1994); *In re Milford Power Plant*, 8 E.A.D. 670, 672 n.1 (EAB 1999).

[14] The term "available" in this first step refers to "those air pollution control technologies or techniques with a practical potential for application to the emissions unit and the regulated pollutant under evaluation." *See RockGen Energy Ctr.*, 8 E.A.D. 536, 542 n.11 (EAB 1999).

options, and elimination of those controls that are not available[15] and applicable. NSR Manual at B.7; *see also Knauf I* at 130. A technology is applicable if it can be "reasonably installed and operated on the source type under consideration," in light of how the particular control option has been used in the past and how that past use compares to the proposed project. NSR Manual at B.17*; see Knauf I* at 130. A control option is presumed to be applicable if it has been used on the same or similar type of source in the past. *Knauf I* at 130. At the third step of the BACT analysis, the control options not eliminated based on infeasibility are listed in order of stringency (i.e., from the most to the least effective in terms of emission reduction potential). NSR Manual at B.7, B.22. Next, step four introduces the consideration of collateral energy, environmental, and economic impacts, to either confirm the most stringent remaining control option as BACT, or to identify a less stringent option as BACT, if appropriate, based on concerns regarding one or more of these factors. *Knauf I* at 131, NSR Manual at B.26. The final step consists of the selection of BACT. NSR Manual at B.6. Basically, the most stringent control option not eliminated during steps one through four is BACT for the proposed source. NSR Manual at B.53. Because the BACT analysis is so critical to the PSD permitting process, it should be well documented in the record, and any decision to eliminate a control option should be adequately explained and justified. *Knauf I* at 131.

c. *Additional Impact Analysis*

Finally, as noted above, PSD permit applicants must conduct additional impact analyses for each regulated pollutant under the Act that will be emitted from the proposed facility. 40 C.F.R. § 52.21(o); *see also* NSR Manual at D.1. The additional impact analysis assesses the impacts of air, ground and water pollution on soils, vegetation and visibility resulting from the proposed emissions and the growth associated with the proposed facility. *Id.* Specifically, the PSD regulations require the owner or operator of a proposed source to: "[P]rovide an analysis of the impairment to visibility, soils and vegetation that would occur as a result of the source * * * and other growth associated with the source * * * . The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value." 40 C.F.R. § 52.21(o)(1); *see In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 130 (EAB 1997). Generally the additional impact analysis consists of four parts: (1) impairment to visibility; (2) soils and vegetation impacts; (3) ambient air quality impact; and (4) growth expected as result of the source or modification. *See* 40 C.F.R. § 52.21(o).

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[15] In this second step, "available" refers to commercial availability. *See RockGen*, 8 E.A.D. at 542 n.11.

B. *Factual Background & Project Description*

On March 21, 2002, Indeck submitted a PSD permit application regarding the planned construction of a 660-megawatt coal-fired steam electric generating station to be located in the Deer Run Industrial Park, in Elwood, Illinois.[16] *See* Resp't Ex. B at 2-5.[17] The City of Elwood is located in Will County, in an area designated as attainment for PM, SO_2, NO_x, and CO. Thus, the PSD requirements apply to these pollutants.[18] On April 7, 2003, IEPA released for public comment a draft PSD permit for Indeck's proposed facility, and on May 22, 2003, IEPA conducted a public hearing in Elwood, Illinois. Petitioners participated in the public hearings and submitted comments on the draft permit.[19] On October 10, 2003, IEPA issued Indeck's PSD permit, approving construction of the planned 660-megawatt coal-fired steam electric generating station. Pet'rs Ex. A ("Permit").[20]

The proposed power plant would utilize two circulating fluidized bed ("CFB") boilers,[21] each with a maximum rated capacity of 2900 million British thermal units per hour ("MBTU/hr"). *See* Permit at 3. According to the description of the project, the CFB boilers would burn coal as the primary fuel, petroleum coke and coal tailings as secondary fuel (up to 20%), and would use natural gas as a start-up fuel.[22] *Id*; *see also* Pet'rs Ex. C ("Project Summary") at 2. The proposed

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[16] The proposed facility meets the definition of "electric utility steam generating unit" in the PSD regulations. *See* 40 C.F.R. § 52.21(b)(31).

[17] For purpose of this decision, all exhibits submitted with the Response to Amended Petition will be referred to as "Respondent's Exhibit" or "Resp't Ex." along with the appropriate designation.

[18] The facility, however, will be located in an area that is in nonattainment for ozone. Resp't Ex. A at 1-3. Therefore, it is subject to the nonattainment area new source review ("Nonattainment NSR") requirements for VOCs, and not the PSD requirements. *See In re Metcalf Energy Ctr*., PSD Appeal Nos. 01-07 & 01-08, at 6 n.4 (Aug. 10, 2001). The facility is subject to both PSD and nonattainment NSR for NO_x. *See, e.g., In re Three Mountain Power, LLC*, 10 E.A.D. 39, 48 (EAB 2001).

[19] In order to challenge a PSD permit, the petitioner must have participated during the public comment period by testifying at public hearings or by submitting written comments. 40 C.F.R. § 124.19(a). The Petitioners in this case have satisfied this requirement.

[20] For purpose of this decision, all exhibits submitted with the Amended Petition will be referred to as "Petitioners' Exhibit" or "Petr's Ex." along with the appropriate designation.

[21] A CFB boiler burns fuel on a "floating" bed. That is, air pressure beneath the bed floats the bed within the combustion chamber, allowing the bed to behave like a fluid. *See* Pet'rs Ex. C ("Project Summary") at 2.

[22] The facility plans to burn primarily Illinois bituminous coal, which has a typical pre-washed sulfur content of 3.51 percent by weight and a Higher Heating Value of 9,965 BTU per pound. Permit at 3. According to IEPA's permit approval, this is equivalent to an uncontrolled SO_2 emission rate of 7.0 pounds per MBTU ("lb/MBTU") unwashed, or approximately 4.7 lb/MBTU washed. *Id*. Coal washing involves processing the coal with water in jigs or tables to separate impurities from the coal,

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facility would be a major stationary source under the PSD program because it has the potential to emit greater than 100 tons each of PM, SO_2, NO_x and CO annually.[23] Permit at 3. Also, the proposed facility would have the potential to emit various amounts of fluorides, sulfuric acid mist, and beryllium.[24] *Id*.

The proposed facility would utilize several measures to control emissions. First, Indeck's CFB boilers will, by their design, achieve some degree of emission controls. The uniform temperatures across the fuel bed in a CFB boiler results in more efficient combustion and consequently lower NO_x emissions. *See* Resp't Ex. B at 2-1. Expected temperature and residence time in the combustion chamber would help keep CO and volatile organic material emissions at low levels. Project Summary at 2. Additionally, Indeck's CFB boilers would be routinely injected with crushed limestone into the fuel bed to absorb SO_2. Resp't Ex. B at 2-1. Indeck's CFB boilers would also utilize hot cyclones to remove limestone particulate from the exhaust stream and return it to the fuel bed for additional SO_2 removal. Project Summary at 2. Finally, the boilers would employ selective

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based upon relative density, as coal is less dense than the impurities. This process reduces the sulfur content of the coal fuel as some sulfur is contained in the impurities rather than in the coal itself. *See In re Prairie State Generating Co.*, 13 E.A.D. 1, 38-39 (EAB 2006).

[23] *See supra* note 11 (identifying threshold levels for PSD regulated pollutants).

[24] The potential emissions for the proposed boilers, assuming continuous operation at maximum load, are as follows (asterisks indicate potential emissions exceeding regulatory significance levels under the PSD program, *see* 40 C.F.R. § 52.21(b)(23)(i)):

Pollutant	Potential Emissions (tpy)
PM	384.0*
NO_x	2560.0*
SO_2	3840.0*
CO	2816.0*
Volatile Organic Material (VOM)	102.4*
Flourides	50.2*
Sulfur Acid Mist	10.2*
Beryllium	0.004
Lead	0.31

Permit Attachments, tbl. I. According to IEPA, actual emissions should be less, since the plant likely will not always operate under maximum load. Project Summary at 3. Smaller amounts of PM, NO_x, CO and VOM will also be emitted by other emission units at the facility, such as the auxiliary boiler, the area for storage and handling of coal, ash, and limestone and certain bulk materials preparation operations involving gas combustion dryer. *Id.*

non-catalytic reduction (SNCR) to further NO_x control,[25] *see* Resp't Ex. B at 2-2, and a fabric filter (also called a baghouse) to control PM.[26] *See* Project Summary at 2.[27]

As discussed in Part II.B. below, Petitioners argue, among other things, that the permit's BACT limits are unlawful because Indeck and IEPA failed to adequately assess the impact of the proposed facility on the soils and vegetation within the Midewin National Tallgrass Prairie. Congress authorized the establishment of the Midewin National Tallgrass Prairie ("Midewin") on approximately 19,000 acres of federal land in Will County, Illinois, about 40 miles southwest of Chicago. Illinois Land Conservation Act of 1995, Pub. L. 104-106, § 2914(a)-(b) (Feb. 10, 1996); Brief of Openlands as Amicus Curiae in Support of Petitioners at 2-3 (Nov. 9, 2005) ("Openlands Br.").[28] Congress transferred land that had previously been used by the U.S. Army as an ammunition-producing facility[29] to the Department of Agriculture, which was instructed to establish and manage the Midewin as part of the National Forest System.[30] Pub. L. 104-106, § 2914(a)-(c). Because of the nature of the ammunition-producing facility, the Midewin had been surrounded by thousands of acres of buffer land made up of farmland, prairie remnants, woods, and streams. Openlands Br. at 2. At the time of the transfer, although only a small percentage of the land was still high quality prairie, the intention of the project was to restore the remainder of the site to the original

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[25] SNCR uses ammonia (NH_3), injected into the hot flue gas, to react with NO_x to form N_2 and H_2O. Project Summary at 2.

[26] The baghouse will also capture SO_2 that has been absorbed by limestone particulate in the flue gas. Project Summary at 2-3.

[27] Sources at the facility, other than the CFB boilers, will also emit smaller amounts of PM, NO_x, CO, and VOCs. These include a natural gas fired auxiliary boiler, cooling towers, coal and limestone storage and bulk material handing operations, and roadways and other sources of fugitive dust. Permit at 5. These sources will be controlled as follows: (1) Auxiliary boiler – by way of low NO_x burners; (2) Bulk material storage and handling – by way of baghouses and "dust control measures"; (3) Cooling towers – by way of high-efficiency drift eliminators; and (4) Roadways and other sources of dust – by way of paving and "dust control measures." *Id.*

[28] Openlands is a non-profit member-based corporation dedicated to preserving and enhancing public open space in the Chicago metropolitan area. As discussed *infra* at note 48, the Board has admitted Openlands' amicus brief to the record on appeal.

[29] The land had previously been used by the U.S. Army from the 1940s to the 1970s to produce ammunition and was known as the Joliet Army Ammunition Plant (also known as the Joliet Arsenal). Openlands Br. at 2.

[30] A smaller portion of the Joliet Arsenal property was earmarked for a veteran's cemetery, a county landfill, and an industrial park. *See* Pub. L. 104-106, §§ 2921-2923. Certain portions were also retained to be used for environmental cleanup that was ongoing at the site. *See id.* § 2932.

tallgrass prairie ecosystem that it had once been. *See* Resp't Ex. G[31] (Jill Riddell, Midewin Prairie Rises from Vast Site of Joliet Arsenal, Nurturing and Healing Grassland, Chicago Tribune, Aug. 9, 1996, *downloaded from* www.chicago.tribune.com). Congress acknowledged this fact, stating that one of the purposes of the Midewin is the "manage[ment of] the land and water * * * in a manner that will conserve and enhance the native populations and habitats of fish, wildlife, and plants." Pub. L. 104-106, § 2914(c)(1).

The Midewin was the country's first federally designated tallgrass prairie and is currently home to 348 species of native plants, over 108 species of breeding birds, 27 species of mammals, 9 species of freshwater mussels, and 23 species of amphibians and reptiles. Resp't Ex. G (page discussing the Midewin *available at* www.recreation.gov (last revised June 30, 2003)); various printouts from http://www.museum.state.il.us/exhibits/midewin) (last revised May 6, 2001). Of these plant and animal species, 16 are state-listed endangered or threatened species[32] and 4 are federally-listed endangered or threatened species.[33] *Id*. One portion of the Midewin (which apparently is located next to the proposed facility) contains an unusual dolomite prairie, where thin alkaline soils overlay dolomite bedrock. *Id*. These alkaline soils contain important plant nutrients and support two state and federal endangered plant species. *Id*.

C. *Procedural Background*

On November 17, 2003, Petitioners filed a petition for review with the Board challenging the IEPA-issued PSD permit on nine different grounds. In particular, Petitioners asserted that: (1) Source-Wide Permit Condition 9, which allows for the construction of a power plant with less capacity than addressed by the permit application, is clearly erroneous (*see infra* Part II. A.); (2) IEPA and Indeck failed to conduct a proper assessment of impairment to soils and vegetation that would occur as a result of the proposed facility (Part II. B.); (3) the permit's SO_2 limits do not reflect BACT because Indeck did not credibly consider the use of low-sulfur coal (Part II. C.); (4) the permit unlawfully allows Indeck to burn any "solid fuel" without defining such term or considering alternative fuels in its BACT analysis (Part II. D.); (5) the permit provision exempting all shutdown, startup, and malfunction events from short-term emission limits is unlawful (Part II. E.); (6) Indeck's proposed particulate matter emission limits do not reflect

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[31] The various documents contained in Respondent's Exhibit G were part of the administrative record for the final permit.

[32] These are species of plants or animals which have been listed as endangered or threatened by the Illinois Endangered Species Protection Board.

[33] A "federally-listed species" is "any species of fish, wildlife, or plant [that] has been determined to be endangered or threatened under section 4 of the Endangered Species Act." 50 C.F.R. § 402.02.

BACT (Part II. F.); (7) the permit's NO_x limit does not reflect BACT (Part II. G.); (8) IEPA unlawfully failed to set a BACT limitation for fluorides (Part II. H.); and (9) IEPA erroneously concluded that it has no obligation to consider alternative locations for the proposed facility (Part II. I.).

By letter dated November 20, 2003, the Board alerted the IEPA, Region 5, and Indeck that the petition had been filed, and requested that IEPA file its response on the merits by December 22, 2003.[34] This began what would become a fairly elaborate procedural history as described below.

On December 19, 2003, Petitioners filed a motion requesting leave to file an amended petition for review. Accompanying the motion was an amended petition for review ("Amended Petition") that raised one additional argument. The Amended Petition challenged the validity of the permit based on EPA's allegedly unlawful failure to comply with the consultation requirements of section 7 of the Endangered Species Act ("ESA"), 16 U.S.C. § 1536.[35] On January 9, 2004, IEPA filed a motion opposing Petitioners' request to amend the petition.

On February 3, 2004, the Board granted Petitioners' motion to amend the petition[36] and requested that IEPA and Region 5 respond to the new ESA-related argument (separately or collectively) no later than February 18, 2004. The Board also requested EPA's Office of General Counsel ("OGC") to provide a response to the new ESA-related argument by that same deadline. The Board extended this deadline several times, upon IEPA's and OGC's request, to March 30, 2004 (deadline for IEPA to file a response to the November 17 petition), and May 6, 2004

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[34] On December 18, 2003, IEPA filed the first of what would be three motions requesting an extension of time to file its response. The Board issued an order the next day granting IEPA's request for extension of time, and requiring a response to the November 17 petition for review no later than February 5, 2004.

[35] Section 7 of the ESA requires all federal agencies to, among other things, ensure through consultation with the Secretary of Interior (and/or the Secretary of Commerce), whose authority in the instant case is exercised by the U.S. Fish and Wildlife Service ("FWS"), that their actions are not likely to jeopardize the continued existence of any endangered or threatened species. ESA § 7(a)(2), 16 U.S.C. § 1536(a)(2).

[36] The Board read Petitioners' new issue as raising a challenge to the validity of the entire permit, rather than raising a legal issue disassociated from the PSD regulations and the permitting responsibilities of the EPA, and granted Petitioners' request. In its order, the Board explained that in the particular circumstances in this case, where there was no discernible prejudice to the permittee, the amended petition was filed before any responsive pleadings, and the issue raised involved important policy considerations, warranted deviation from its general practice of only entertaining issues raised during the 30-day filing deadline for filing petitions. *See* Order (1) Granting Motion for Leave to File Amended Petition and (2) Requesting Region 5 and/or OGC to File a Response (Feb. 3, 2004).

(deadline for OGC/Region 5 to respond to the ESA consultation issue).[37]

On March 30, 2004, IEPA filed its response to the Amended Petition. *See* IEPA Response. In its response IEPA addressed all of the issues Petitioners raised in the Amended Petition, except for the ESA-related issue. With respect to the ESA arguments, IEPA deferred to Region 5 and OGC. *See id.* at 104-105.[38]

On May 6, 2004, IEPA filed a Motion for Leave to File Motion for Voluntary Partial Remand and a Motion for Voluntary Partial Remand. In its motion, IEPA explained that Region 5 had agreed to consult voluntarily with the Fish and Wildlife Service ("FWS") regarding Indeck's PSD permit. Consequently, IEPA requested that the Board remand the ESA consultation issue to IEPA and that the Board complete its evaluation of the remaining nine issues raised in the Amended Petition. On the same day, OGC filed a response on behalf of itself and Region 5. Response of the Office of General Counsel to the Board's February 3, February 4, and March 19, 2004 Orders (May 6, 2004). OGC's response did not address the merits of the ESA-related issues in the Amended Petition. Rather, OGC concluded that because Region 5 had decided to voluntarily engage in the consultation process with the FWS, a response to the questions posed by the Board in its February 3, 2004 Order was no longer necessary because the issues were moot. On May 11, 2004, Petitioners filed a response to IEPA's Motion for Voluntary Partial Remand and Cross Motion for Complete Remand, arguing that a partial remand was inappropriate and that the Board should remand the entire permit to IEPA. On May 20, 2004, the Board issued an Order denying IEPA's motion for partial remand, denying the Petitioners' cross motion for full remand, and staying the Board's consideration of the remaining nine issues pending the outcome of the

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[37] On February 3, 2004, IEPA filed its second motion requesting an extension of time to file its response to the November 17 petition for review. On February 4, 2004, the Board granted IEPA's motion for extension of time, establishing a new deadline of March 22, 2004, for filing IEPA's response.Additionally, the Board amended its February 3 Order by extending until March 22 the deadline for IEPA, Region 5 and OGC to file their responses to the Petitioners' new ESA-related issue. *See* Order (1) Granting Motion for Extension of Time to File Response and (2) Amending the Board's February 3, 2004 Order Granting Leave to File Amended Petition (Feb. 4, 2004).

On March 16, 2004, OGC filed an unopposed motion, on behalf of itself and Region 5, for an extension of time to respond to the ESA-related issues. On March 17, 2004, IEPA filed its third motion seeking an extension of time to file its response. By Order dated March 19, 2004, the Board granted both motions, extending IEPA's response deadline to March 30, 2004, and extending until May 6, 2004, the deadline for OGC/Region 5 to respond to the ESA consultation issue. *See* Order Granting Motions for Extension of Time (March 19, 2004).

[38] On April 22, 2004, Petitioners filed a motion for leave to file a reply, to address both IEPA's response to the Amended Petition, and Region 5/OGC's expected May 6 Response regarding ESA consultation. The Board granted Petitioners' motion on April 28, 2004. *See* Order Granting Motion for Leave to File Reply Brief (April 28, 2004).

ESA consultation process.[39] On June 1, 2004, Petitioners filed their reply to IEPA's response to the Amended Petition. *See* Petitioners' Reply to Respondent's Response to Amended Petition ("Pet'rs Reply").[40]

A year after the Board's order staying its consideration of the petition, in the absence of any information from the parties about the status of the consultation process, the Board issued an order requiring that Region 5 submit a status report on the progress of its ESA consultation.[41] The Region filed its status report on July 17, 2005, explaining that representatives of Region 5, IEPA, FWS, and Indeck-Elwood met and exchanged information during the course of a year on the potential impact of the proposed power plant on four listed species.[42] *See* Status Report. The consultation process concluded with the determination by Region 5 and the FWS that the four listed species were not likely to be adversely affected by the construction and operation of the proposed power plant. *Id*. ¶¶ 2, 3.

After receiving Region 5's status report, the Board scheduled a status conference, which was held on July 20, 2005.[43] IEPA and Petitioners participated in the status conference, with a representative of Indeck-Elwood observing. The objective of the conference was to discuss the case status and anticipated future actions. After the status conference, the Board determined that additional briefing was necessary. Accordingly, the Board then issued an order lifting the stay and requesting IEPA and Petitioners to respond to certain questions arising from the ESA consultation.[44]

After various requests for extension of time, IEPA filed its ESA-related brief on October 21, 2005. IEPA Supplemental Brief ("IEPA Suppl. Br."). Petitioners filed their ESA-related brief on November 17, 2005. Petitioners' Brief Responding to Board's July 21, 2005 Order and IEPA's Supplemental Brief

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[39] *See* Order Denying Respondent's Motion for Voluntary Partial Remand and Petitioners' Cross Motion for Complete Remand, and Staying the Board's Decision on the Petition for Review (May 20, 2004).

[40] On that same date, Petitioners filed a motion for clarification of the Board's May 20, 2004 Order. IEPA opposed Petitioners' motion by motion dated June 17, 2004. Upon consideration of the motions, the Board concluded that clarification was unnecessary. By order dated July 7, 2004, the Board denied Petitioner's motion for clarification. *See* Order Denying Petitioners' Motion for Clarification (July 7, 2004).

[41] *See* Order Requiring Status Report (May 27, 2005).

[42] Under the ESA, the Secretary of the Interior and the Secretary of Commerce are tasked with determining which species should be considered endangered or threatened and "listing" those species. *See* ESA § 4, 16 U.S.C. § 1533; *see also* Part II. J.1. *infra*.

[43] *See* Order Scheduling Status Conference (July 6, 2005).

[44] *See* Order Lifting Stay and Requiring Additional Briefing (July 21, 2005).

("Pet'rs Post-Consultation Br."). After a preliminary examination of the ESA-related briefs, the Board was concerned that the ESA issue may not have been fully mooted by the ESA consultation process Region 5 had initiated. The Board proceeded to issue an order requesting OGC to file a brief addressing specific questions related to the ESA issues.[45] OGC filed its response on January 17, 2006, addressing only one of the various questions posed by the Board on its December 1st Order. *See* Brief of EPA Office of General Counsel (1) Responding to Question of Whether the Board Needs to Consider ESA Issues; and (2) In the Alternative, Requesting Extension of Time to Address Substantive Issues if Necessary ("OGC Post-Consultation Br.") at 2. Because the Board believed that answers to all the questions would assist in its consideration of the ESA matters, the Board issued another order requesting OGC to address the remaining questions no later than March 17, 2006,[46] which OGC did. *See* Brief of EPA Office of Air and Radiation ("OAR Post-Consultation Br.") at 5-15. On April 5, 2006, Petitioners filed a motion requesting leave to file a response to OGC's March 17 brief. The Board granted Petitioners' request allowing Petitioners until April 14, 2006, to file their response brief.[47] The Board received this brief on April 12, 2006. *See* Petitioners' Brief Responding to EPA Office of Air and Radiation Brief and Request for Leave to File Amended Petition Should the Board Not Remand the Permit ("Pet'rs Post-Consultation Reply Br.").[48] The ESA issue is discussed in Part II. J. below. Briefing was completed in April of 2006, and the case now stands ready for decision by the Board.

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[45] *See* Order Requesting OGC to File a Brief (Dec. 1, 2005).

[46] *See* Order Requesting OGC to Answer Remaining Questions (Jan. 27, 2006).

[47] *See* Order Granting Motion for Leave to File Response Brief (April 5, 2006).

[48] The Board has also received two motions for leave to file an amicus brief in this matter. In each case, the motion is accompanied by the proposed amicus brief itself. The first was filed on October 13, 2005, by the City of Chicago. Motion for Leave to File Amicus Brief (Oct. 13, 2005) ("Chicago's Motion") and accompanying City of Chicago's Amicus Brief (Oct. 13, 2005). On November 3, 2005, IEPA filed a response opposing the City of Chicago's request. Response in Opposition to City of Chicago's Motion for Leave to File *Amicus Curiae* Brief (Nov. 3, 2005). Upon review, the Board denies Chicago's Motion because the City seeks to raise an issue outside the scope of the Amended Petition, i.e., the feasibility and effectiveness of integrated gasification combined cycle technology. The second motion for leave to file an amicus brief was filed on November 9, 2005, by Openlands, a non-profit member-based corporation dedicated to preserving and enhancing public open space in the Chicago metropolitan region. Motion of Openlands for Leave to File a Brief as *Amicus Curiae* in Support of Petitioners (Nov. 9, 2005) ("Openlands Motion") and accompanying Brief of Openlands as Amicus Curiae in Support of Petitioners (Nov. 9, 2005) ("Openlands Br."). IEPA does not oppose Openland's Motion. Upon review, the Board grants Openlands' Motion. Openlands' Brief has been admitted to the record on appeal and duly considered as part of this decision.

D. *Standard of Review*

When evaluating a petition for review of a PSD permit, the Board first considers whether the petitioner has met key threshold pleading requirements such as timeliness, standing, and issue preservation. *See* 40 C.F.R. § 124.19; *In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 5 (EAB 2000) ("*Knauf II*"). For example, a petitioner seeking Board review must file its appeal within thirty days of permit issuance and must have participated during the public comment period. 40 C.F.R. § 124.19. Moreover, in order to demonstrate that an issue has been preserved for appeal, a petitioner must show that any issues being appealed were raised with reasonable specificity during the public comment period. 40 C.F.R. §§ 124.13, 124.19(a); *see, e.g.*, *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230 (EAB 2000); *In re Rockgen Energy Ctr.*, 8 E.A.D. 536, 548 (EAB 1999).[49] This burden rest squarely with the petitioner. *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 n.10 (EAB 1999) ("It is not incumbent upon the Board to scour the record to determine whether an issue was properly raised below."). Assuming that a petitioner satisfies the pleading obligations, the Board then evaluates the petition on the merits to determine if review is warranted.[50]

In order to justify review, a petitioner must demonstrate that the actions of the permitting authority were based on: (1) a finding of fact or conclusion of law that is clearly erroneous; or (2) an exercise of discretion or an important policy consideration that the Board should, in its discretion, review. 40 C.F.R. § 124.19(a). The burden of demonstrating that review is warranted rests with the petitioner challenging the permit condition. To obtain review, a petitioner must describe each objection it is raising and explain why the permit issuer's previous response to each objection was clearly erroneous or otherwise deserving of review. *See In re Tondu Energy Company*, 9 E.A.D. 710, 714 (EAB 2001); *Encogen*, 8 E.A.D. at 252.

II. *DISCUSSION*

As previously noted, Petitioners raise ten issues related to IEPA's approval of Indeck's PSD preconstruction permit. For the reasons described below, review is denied with respect to the majority of the issues raised on appeal. With respect

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[49] Alternatively, a petitioner may demonstrate that an issue was not reasonably ascertainable during the public comment period. 40 C.F.R. § 124.13; *see In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 n.8 (EAB 1999).

[50] The preamble to section 124.19 provides guidance regarding the Board's exercise of its authority, stating that the "power of review should be only sparingly exercised" and "most permit conditions should be finally determined at the [permitting authority] level." 45 Fed. Reg. 33,209, 33,412 (May 19, 1980); *Knauf I*, 8 E.A.D. at 127.

to four issues, however, we remand the permit for additional proceedings consistent with the Board's decision. In particular, the permit is remanded on the following issues: (1) the inclusion of Source-Wide Condition 9, which allows the construction of a power plant with less capacity than addressed in Indeck's permit application (*see infra* Part II.A.); (2) IEPA's soils and vegetation analysis (Part II.B.); (3) the permit's substitution of work and operational practices for BACT numeric limits during startup, shutdown, and malfunction events (Part II.E.); and (4) the permit's PM emissions limitation and the absence of a limitation for condensable PM (Part II.F.). Review is denied on all other issues raised in the Amended Petition. The following discussion addresses each issue in detail.

A. *Challenges to Source-Wide Condition 9*

The first challenge Petitioners raise on appeal is to Source-Wide Condition 9 or permit Condition 9. This condition allows the construction of a power plant that has less capacity than that addressed in Indeck's application without IEPA's prior approval. Specifically, permit Condition 9 provides:

> This permit allows the construction of a power plant that has less capacity than that addressed by the application without obtaining prior approval by the Illinois EPA, as follows. This condition does not affect the Permittee's obligation to comply with the applicable requirements for the various emission units at the plant:

1 The reduction in the capacity of the plant shall generally act to reduce air quality impact, as emissions from individual emission units are reduced, heights of structures are reduced, but heights of stacks are not significantly affected.

2 The reduction in the capacity of the plant shall result in a pro-rata reduction in the emission limitations established by this permit for the CFB boilers that are based on the capacity of the boilers.

3 The Permittee shall notify the Illinois EPA prior to proceeding with any significant reduction in the capacity of the plant. In this notification, the Permittee shall describe the proposed change and explain why the proposed change will act to reduce impacts, with detailed supporting documentation.

4 Upon written request by the Illinois EPA, the Permittee shall promptly have dispersion modeling performed to demonstrate that the overall effect of the reduced capacity of the plant is to reduce air quality impacts, so that impacts from the plant remain at or below those predicted by the air quality analysis accompanying the application.

Permit at 11 (Source-Wide Condition 9: Capacity of Plant). IEPA included this condition in the permit after the close of the public comment period.

Petitioners argue that IEPA unlawfully inserted this condition into Indeck's final permit without public notice or a new BACT analysis. Amended Petition at 8-11. Petitioners allege that this permit condition unlawfully "allows Indeck to construct a different facility than the facility proposed in the application * * * without obtaining further IEPA approval, without modifying its existing permit and without any opportunity for public notice and comment." *Id.* at 8. Petitioners add that under permit Condition 9 Indeck could reduce the capacity of the facility with no reduction in air quality. *Id.* at 9. According to Petitioners, a size discrepancy between a proposed source and a smaller source that a permittee may wish to construct is a basis for denying a PSD permit because it is impossible to make a credible BACT determination without detailed facility information. *Id.* at 10, 11. Petitioners cite two cases in support of this proposition. *See id.* at 11 (citing *In re W. Suburban Recycling and Energy Ctr.*, 6 E.A.D. 692 (EAB 1996); *In re CertainTeed Corp.*, 1 E.A.D. 743, 747-49, n.11 & 12 (Adm'r 1982)).

Petitioners further observe that because permit Condition 9 was not included in the draft permit, the public had no opportunity to comment on the permit condition prior to issuance of the permit. Petitioners also note that while IEPA's Responsiveness Summary identified Condition 9 as one of the significant changes from the draft permit, IEPA did not provide any discussion of the origin of the permit condition. *See id.* at 9.

IEPA asserts that permit Condition 9 is ministerial in nature. IEPA Response at 9, n.5. IEPA explains that the purpose of the condition is to "provide appropriate flexibility and minimize unnecessary administrative delay." *Id.* at 11.[51] In IEPA's words "Condition 9 recognizes that the permit allows Indeck to construct a power plant that is smaller in its capacity, and thus different in one respect from the proposed source described in the permit application, without the need to

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[51] IEPA further states:

> [T]he Illinois EPA realized that Indeck's proposal, in some respects, contains features that are somewhat conceptual and can be expected to evolve as development of the facility proceeds. For example, the source has not yet received approval under the Clean Water Act's National Pollution Discharge Elimination System or section 404 permit programs, which could affect the layout or detailed design of the power plant. Given those considerations, the Illinois EPA viewed Source-Wide Condition 9 as a means to manifest Indeck's flexibility in pursuing a smaller plant, thereby enabling a possible change that would be environmentally beneficial.

IEPA Response at 12.

obtain prior approval from [IEPA]." *Id*. at 9. IEPA further explains that "[t]he purpose of the permit condition * * * is to establish the requirements that are associated with a decision to reduce the size of the power plant. As such, the provisions address a possible development with respect to the plant's construction and enable the permit applicant to proceed expeditiously in making design and planning changes that would result in a reduction of the power plant's capacity." *Id.* at 9. The authority to incorporate this type of permit conditions, according to IEPA, is inherent in the PSD program. *See id.* at 11.

In their reply to IEPA's arguments, Petitioners identify three ways in which, in their view, permit Condition 9 defeats the fundamental purposes of the PSD program. *See* Pet'rs Reply at 3. First, Petitioners argue that "IEPA is abdicating its responsibility to conduct source specific BACT review." *Id*. Secondly, Petitioners claim that permit Condition 9 "defeats the fundamental public participation purpose of the PSD program," because the condition was inserted after the public comment period closeout. *Id.* at 4. Finally, in Petitioners' view, permit Condition 9 "defeats the fundamental purpose of the PSD program to ensure that IEPA has a credible model of regional air impacts and, in turn, can reasonably evaluate other construction permits for new and modified sources." *Id; see also* Amended Petition at 10.

The issues and supporting arguments Petitioners raise on appeal can be grouped in two categories, those that are mainly procedural and those that go to the substance of permit Condition 9. The procedural issues relate to the lack of public participation and omissions in the response to comments. The substantive issues Petitioners raise relate to the BACT determination and the available air quality increments. However, because we agree with Petitioners that the permitting proceedings were procedurally defective in terms of the addition of permit Condition 9, we do not reach the substantive arguments raised in the petition.

As noted above, Petitioners object to the lack of public opportunity to comment on permit Condition 9 and on the plant changes allowed under this condition. IEPA, however, argues that permit Condition 9 is largely ministerial in nature and that the absence of public comment regarding a non-substantive provision is, at most, harmless error. We disagree.

The regulations governing the PSD permitting process do not call for a new comment period every time the permit issuer adds a new permit condition in response to comments on the draft permit. Indeed, the regulations contemplate the possibility that permit terms will be added or revised in response to comments received during the public comment period. *See, e.g., In re Amoco Oil Co.*, 4 E.A.D. 954, 980 (EAB 1993); *In re Chem-Sec. Sys., Inc.*, 2 E.A.D. 804, 807 n.11 (EAB 1989). The determination of whether the comment period should be reopened in such a case is generally left to the sound discretion of the permit issuer. *See* 40 C.F.R. § 124.14(b); *Amoco Oil*, 4 E.A.D. at 980. While the Board

often defers to the permit issuer's discretion in these matters, the Board nonetheless will look at the change in the draft permit and, based on the significance of the change, will determine whether reopening the public comment period is warranted in a given circumstance. *See Amoco*, 4 E.A.D. at 981; *In re Matter of GSX Services of S. Carolina, Inc.*, 4 E.A.D. 451, 467 (1992).

With regard to changes in the draft permit, the applicable regulations require the permit issuer to specify which provisions of the draft permit have been changed in the final permit decision and the reasons for the change. 40 C.F.R. § 124.17(a)(1); *In re City of Marlborough, Mass. Easterly Wastewater Treatment Facility*, 12 E.A.D. 235, 244-45 (EAB 2005). Compliance with this requirement is of primary importance because it ensures that all significant permit terms have been properly noted in the record of the proceeding and illuminates the permit issuer's rationale for including key terms. It further "ensures that interested parties have an opportunity to adequately prepare a petition for review and that any changes in the draft permit are subject to effective review." *City of Marlborough*, 12 E.A.D. 244-45 (quoting *Amoco*, 4 E.A.D. at 980). Indeed, the Board has in the past remanded permits where the permit issuer has failed to explain why it decided to change the terms of the draft permit. *See, e.g., In re City of Marlborough*, 12 E.A.D. at 245 (remanding permit because the Region failed to explain why it apparently agreed with permittee's comment and decided to change the terms of the permit); *In re Amoco*, 4 E.A.D. at 980 (remanding permit where the Region's mere concurrence with a comment failed to provide adequate explanation for a change in draft permit and, thus, failed to provide the parties "with an opportunity to prepare an adequately informed challenge to the permit addition"); *see also In re Matter of GSX Services of South Carolina, Inc.*, 4 E.A.D. 451, 467 (1992). Absent such an explanation, it does not appear that the record reflects the "considered judgment" necessary to support the permit determination. *Cf. In re Austin Powder Co.*, 6 E.A.D. 713, 720 (EAB 1997). A permit issuer must, therefore, articulate with reasonable clarity the reasons for its conclusions and must adequately document its decision making. *See, e.g., In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417-18 (EAB 1997) (remanding RCRA permit because permitting authority's rationale for certain permit limits was not clear and therefore did not reflect considered judgment required by regulations); *Austin Powder*, 6 E.A.D. at 720 (remand due to lack of clarity in permitting authority's explanation).

In the instant case, IEPA identified permit Condition 9 as one of the "Significant Changes between the Draft Permit and issued Permit." *See* Responsiveness Summary at 54 (Tbl. 1). Nevertheless, IEPA failed to provide a meaningful analysis of, or sufficient justification for, the permit change, nor did it provide an opportunity for public comment. In our view, Condition 9 is a significant addition to the permit and at a minimum the public should have been afforded the opportu-

nity to comment.[52] While we understand the desire for flexibility and the value in not having to repeat the permit process if externalities force adjustments in plant size, Condition 9 clearly changes the substance of the PSD permit, allowing for construction of a facility that is physically different than the one permitted, and which may potentially have different emission characteristics. In our view, Condition 9 is thus appropriately seen as a significant addition to the permit that, at a minimum, raises substantial new questions about the permit, and therefore IEPA should have reopened or extended the comment period to subject this condition to public comment. *See* 40 C.F.R. § 124.14(b)(3) (providing that if any data information submitted during the public comment period appear to raise substantial new questions concerning a permit, the permitting authority may, among other things, reopen or extend the comment period under 40 C.F.R. § 124.10 to give interested persons an opportunity to comment on the information). Accordingly, we conclude that the permit is defective with respect to permit Condition 9. The permit is therefore remanded on this issue. On remand, IEPA must either remove Condition 9 from the permit, or reopen the record and provide the public with an opportunity to comment on this issue and provide a response to any such comments received.[53]

B. *Analysis of Impacts On Soils and Vegetation*

Petitioners' second challenge on appeal is to IEPA's soils and vegetation analysis. As mentioned above (*see supra* Part I.B.), Petitioners generally allege that the BACT permit limits are unlawful because Indeck and IEPA failed to adequately assess, prior to issuance of the permit, the impact of the proposed Indeck

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[52] As we are without the benefit of any meaningful explanation by IEPA regarding this provision, we are likewise without the benefit of any justification IEPA may have provided for foregoing public comment. We are highly skeptical of there being such a justification, particularly in view of IEPA's attempt in its brief to paint the issue as ministerial and inconsequential – a characterization with which we take issue. Accordingly, we conclude that the most appropriate course of action is to require public comment on the issue if IEPA intends to retain Condition 9.

[53] As discussed above, Petitioners have also argued that it is impossible to make a credible BACT determination without detailed facility-specific information, and that in this case IEPA is, through permit Condition 9, allowing for the construction of a different plant than the one described in Indeck's application without a BACT determination for the new facility. Amended Petition at 10. Petitioners have also expressed concern regarding the lack of analysis on the impact of Condition 9 on available air quality increments. *Id.* As noted, because we are remanding permit Condition 9 so that IEPA can either remove this condition from the permit or reopen the record to allow for public comment, we do not reach the merits of these arguments. However, should IEPA chose to retain permit Condition 9, IEPA should fully address any comments it may receive relating to these arguments. Further, should these same arguments be raised in a subsequent petition for review with this Board, the Board will take a close look at whether IEPA has adequately considered the impact of Condition 9 on the available air quality increments as well as whether IEPA's analysis sufficiently accounts for any potential capacity changes and whether the inclusion of Condition 9 requires a new or more detailed BACT analysis.

facility on soils and vegetation within the Midewin National Tallgrass Prairie – a national prairie preserve located next to the site where Indeck proposes to construct its power plant. Amended Petition at 12-19; *see also* Openlands Br. at 2-4 (describing the history and background of the Midewin). Petitioners contend that emissions from the facility may adversely affect certain vegetation within the Midewin. *See* Amended Petition at 13-14, 15-17. Petitioners assert that Indeck did not mention the Midewin anywhere in its permit application or materials and that IEPA "perpetuated this silence" by failing to mention the Midewin in its public notice about the hearing, in the draft permit it issued, in its 17-page summary of the project, in its oral presentation to the public, or in any of its other printed materials until prompted to do so by the public. Amended Petition at 12; Pet'rs Reply at 7-8; *see also* Pet'rs Post-Consultation Br. at 8-9 (arguing that Indeck's application was incomplete); Pet'rs Post-Consultation Reply Br. at 3 (asserting that IEPA "brushed off concerns about the threat Indeck's coal plant posed to Midewin and endangered species"). Petitioners claim that not only did the public submit comments on this issue, but also that other state and federal agencies – the U.S. Forest Service, the Illinois Department of Natural Resources, and the U.S. Fish and Wildlife ("FWS" or "Service") – raised significant concerns about the impacts of Indeck's facility on the Midewin. Amended Petition at 18-19. Petitioners allege that IEPA responded to comments in a conclusory manner rather than investigating the issues raised by commenters. *E.g.*, Pet'rs Post-Consultation Br. at 9-10; Pet'rs Post-Consultation Reply Br. at 3.

In addition to these general allegations about the adequacy of the record and IEPA's responses to comments, Petitioners also challenge what they believe are specific flaws in the soils and vegetation analysis that allegedly invalidate IEPA's decision to issue the permit. First, Petitioners argue that Indeck failed to conduct an inventory of the Midewin's soils and vegetation and failed to consider site-specific information about the land uses around its facility. *Id*. at 14; Pet'rs Reply at 12. In Petitioners' view, such an inventory is mandatory. Pet'rs Reply at 5, 8-9, 12; *see* Amended Petition at 14-15. Petitioners rely on the Act (i.e., CAA § 165(e)(3)(B)), the regulation at 40 C.F.R. § 52.21(o), and the NSR Manual for the proposition that a site-specific soils and vegetation analysis beginning with an inventory of the potentially affected soils and vegetation is a "long standing requirement of the PSD program." Pet'rs Reply at 5. In particular, Petitioners argue that the language of the statute unambiguously requires "an analysis of * * * soils and vegetation * * * at the site of the * * * facility and in the area potentially affected." Pet'rs Reply Br. at 9 (quoting 42 U.S.C. § 7475(c)(3)(B)). Petitioners ask the Board to remand the entire permit to assure that a "site-specific soils and vegetation analysis, including an inventory of the Midewin's indigenous species is conducted." Pet'rs Reply at 12. Second, Petitioners argue that the inclusion of a new condition in the final permit requiring Indeck to "compile information on soils conditions * * * and the conditions of vegetation * * * in the Midewin Tallgrass Prairie" demonstrates the inadequacy of the initial soils and vegetation analysis and also "turns the PSD permitting process on its head" by

allowing a required element of the permit application to be done after construction of the facility. *Id*. at 15 (quoting the final permit, Source-Wide Condition 7). Finally, Petitioners allege that there are at least three types of soils and vegetation impacts that IEPA ignored: (1) the impacts of regulated pollutants that do not have ambient air quality standards, such as fluoride and the "plant-growth killing chemicals" proposed to be used in Indeck's cooling towers; (2) Indeck's contribution to ground-level ozone in the area; and (3) the fact that existing air quality standards used by Indeck in its analysis are not necessarily protective of the sensitive species in the Midewin. *Id*. at 15-17.

In their briefs filed after Region 5 consulted with the FWS under the ESA, Petitioners also make several additional arguments connected to this issue, principally to bolster their earlier arguments.[54] *See generally*, Pet'rs Post-Consultation Br. (Nov. 17, 2005); Pet'rs Post Consultation Reply Br. (Apr. 12, 2006). Petitioners first assert that significant new information concerning possible effects of the facility on the Midewin vegetation arose in the course of Region 5's consultation with FWS. Pet'rs Post-Consultation Br. at 3-4. Petitioners contend that this information should have been provided as part of Indeck's original application as it "goes to the heart" of the soils and vegetation analysis required by the regulations and the obligation to consider environmental impacts as part of the BACT collateral impacts analysis. *Id*. at 6-7. Petitioners also argue that the absence of this information in the administrative record prevented the public from being able to meaningfully understand and participate in the permitting process. *Id*. at 9-11. Petitioners further contend that in this case the CAA imposes a duty, independent of any ESA obligation, to reopen the comment period because there has been "subsequent and relevant additional analysis" which allegedly conflicts with prior findings of the permitting agency. *Id*. at 12; *see also* Openlands Br. at 4-5.

In response to Petitioners' challenges, IEPA claims that, while Indeck did not perform an inventory of the soils and vegetation in the impact area as the NSR Manual suggests, it did rely on the procedures set forth in the 1980 Screening Procedure, an approach IEPA believes to be proper. IEPA Response at 22. IEPA argues that the PSD regulations "do not identify the preferred means or methods for performing the soils and vegetation analysis," and that the NSR Manual only offers "limited insight into the desired nature of the evaluation or its corresponding level of detail" and "does not endorse any particular methodology." *Id*. at 37-38. Thus, IEPA represents that it has routinely accepted the use of the 1980 Screening Procedure for assessing impacts to soils and vegetation, although it does acknowledge the limitations of the method. IEPA Response at 43. IEPA asserts that, in its view, Indeck properly applied the 1980 Screening Procedure.

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[54] In their latest briefs, Petitioners also raise numerous ESA challenges. We discuss those issues later in Part II.J., focusing here solely on those PSD-based issues connected to the soils and vegetation analysis.

IEPA Response at 39-41. IEPA additionally claims that, following the public hearing and comment period, it "weighed public concerns" about the Midewin and the leafy prairie clover, and reviewed numerous documents, but did not find "any evidence contradicting the findings presented by Indeck's evaluation of soils and vegetation under the PSD program." *Id*. at 42. In sum, IEPA asserts that the soils and vegetation analysis conducted by Indeck and IEPA was "as a whole, sufficient in scope and documentation." *Id*. at 23; *accord id.* at 41.

In the discussion that follows we first summarize Indeck's and IEPA's original soils and vegetation analysis, the comments submitted that were related to this issue, and IEPA's responses to those comments. We then consider Petitioners' interrelated arguments regarding the adequacy of Indeck's soil and vegetation analysis.

1. *Indeck and IEPA's Initial Approach to the Soil and Vegetation Analysis*

As part of its PSD application, Indeck submitted an Air Quality Modeling Analysis, which included a soils and vegetation analysis. Resp't Ex. Q (Earth Tech, Inc., PSD Construction Permit Application (Volume II) Air Quality Modeling Analysis (Aug. 2002)) at 2-20 to -24 [hereinafter Indeck's Air Quality Analysis]. In conducting the soils and vegetation portion of the analysis, Indeck relied on the procedures set forth in a 1980 EPA publication, U.S. EPA, Office of Air Quality Planning and Standards, *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals* (Dec. 12, 1980) [hereinafter "1980 Screening Procedure"].[55] IEPA Response at 22; *see also* Resp't Ex. I (a copy of the guidance). In applying the 1980 Screening Procedure, Indeck apparently compared the project's predicted impacts (from its air quality modeling) with screening levels presented in the 1980 Screening Procedure. Indeck's Air Quality Analysis at 2-20, -24. According to Indeck's analysis, compliance with the NAAQS and PSD increments assures compliance with sensitive vegetation screening levels. *Id*. at 2-20 ("Most of the designated vegetation screening levels are equivalent to or exceed NAAQS and/or PSD increments, so satisfaction of

[55] EPA created the 1980 Screening Procedure to provide "interim guidance" to state and local air pollution control agencies for determining impacts under section 52.21(o). *See* 1980 Screening Procedure at 1-2 (noting that "[m]uch of the data required to relate ambient concentrations of pollutants to impairment of those values is currently lacking," but that the section 52.21(o) PSD requirements "need to be addressed now while additional investigations are being carried out"). The 1980 Screening Procedure identifies minimum concentration levels of pollutants at which adverse effects have been reported in the available literature and uses these levels as "screening concentrations." 1980 Screening Procedure at 3. In site-specific applications of the Screening Procedure, the source compares its estimated maximum ambient concentrations of pollutants to the screening concentrations for the same pollutants. *Id*. Concentrations in excess of any of the screening concentrations may indicate that the source might have adverse impacts on plants, soils, or animals and that a further detailed analysis or action might be necessary. *Id.*

NAAQS and PSD increments assures compliance with sensitive vegetation screening levels."). In this case, Indeck concluded that "[n]o NAAQS or PSD exceedances are predicted for this Project."[56] *Id*. Indeck's analysis also compared projected soil concentrations with acceptable soil screening levels provided in the 1980 Screening Procedure, and plant tissue concentrations with acceptable tissue screening concentrations and with dietary screening concentration for animals. *Id*. at 2-21, -22 (tables 2-20, -22). The analysis showed that project impacts on soil deposition and plant tissue concentration fall below the screening concentrations provided in the 1980 screening procedure. *Id*. Finally, Indeck's analysis concluded with a brief discussion of the fugitive emissions from the project. Surprisingly, despite the fact that the facility was located next to a recently-established national prairie focused on restoring native plant species, nowhere in Indeck's analysis did it mention the Midewin or the vegetation therein or indicate that it even considered conducting any additional analyses on potentially sensitive species located in the Midewin.

Prior to issuing the draft permit for comment, IEPA reviewed Indeck's Air Quality Modeling Analysis, a portion of which, as we already noted, consisted of Indeck's soils and vegetation analysis. IEPA Response at 41. IEPA claims that it preliminarily determined that "the soils and vegetation analysis, together [with] the rest of the permit application, satisfied the requirements of the PSD program," as evidenced by two memoranda, the draft permit, and Project Summary. *Id*. Notably, however, the IEPA staff member who reviewed Indeck's Air Quality Modeling Analysis never specifically mentioned the soils and vegetation portion of the analysis in his memoranda reporting that Indeck's modeling analyses had conformed to applicable requirements. *Id*. n.43; *see also* Resp't Exs. R, S. Remarkably, IEPA also failed to make any mention of the fact that the proposed facility was to be located adjacent to a recently-established national prairie, a site at which the Forest Service was in the process of restoring historic vegetation.

2. *Comments on the Draft Permit*

During the comment period, numerous commenters – including state and federal agencies – raised concerns about Indeck and IEPA's failure to analyze the impacts of the facility on the Midewin and the plant species therein. Of particular note, the U.S. Forest Service sent a letter to IEPA raising multiple concerns about the emissions from the proposed facility as they were represented in the draft per-

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[56] Indeck did find, however, that for SO_2, "the annual and 3-hour sensitive vegetation screening level is more stringent than the comparable NAAQs standards," and "there is a 1-hour screening level for SO_2 for which there is no NAAQS equivalent." Indeck's Air Quality Analysis at 2-20. In light of this fact, Indeck proceeded to compare SO_2 sensitive vegetation screening levels with SO_2 impacts from the proposed project for the annual, 1-hour, and 3-hour averaging periods. *See id*. at 2-20,-21 (table 2-19). The comparison apparently showed that "[m]aximum impacts for all averaging periods are well within allowable screening levels." *Id*. at 2-20.

mit documents. Pet'rs Ex. F (Letter from Logan Lee, Prairie Supervisor, Midewin National Tallgrass Prairie, USFS/USDA, to Dan Merriman, Hearing Officer, IEPA, at 1-2 (June 19, 2003)) [hereinafter USFS Comment]. The Forest Service specifically noted the following:

> The potential source of acidic, or precursors of acidic deposition[,] are a direct threat to sensitive habitat areas on Midewin. * * * Restoration sites in the vicinity of the proposed power plant have sensitive flora that require high-quality conditions of soil and water. These natural resources can be directly impacted by a change in environmental conditions that include pH, base cation availability in soils, micronutrient availability in soils, and toxic metals. Indeck-Elwood's proposed emissions of hydrogen chloride, NO_x, and SO_2 emissions are acidic or precursors for acid deposition and could cause direct effects to sensitive habitat types at Midewin by decreasing the pH of soil and water resulting from acid deposition downwind of the power plant. Some of the affected habitats are occupied by Federal threatened, endangered, or sensitive species.

Id. at 2. Overall, the Forest Service "conclude[d] that the release of volatile organic material (VOM), nitrogen oxide (NO_x), sulfur dioxide (SO_2), particulate matter less than ten microns in diameter (PM_{10}), carbon monoxide (CO), and hydrogen chloride emissions will adversely affect the resources at Midewin." *Id*. at 1. Also in the record are comments by the Illinois Department of Natural Resources ("DNR") pertaining to the permit, making the same points as the Forest Service. *See* Pet'rs Ex. E (Letter from Stephen K. Davis, Division Chief, Office of Realty and Environmental Planning, DNR, to David J. Kolaz, Chief, Bureau of Air, IEPA, at 1-2 (Sept. 30, 2003)) [hereinafter "DNR Comment"] (citing the same concerns regarding potential deposition of acidic precursors on various plant and animal species in the Midewin and the fact that the facility's emissions might undermine the objectives for ecosystem restoration)). In a follow-up letter, also in the record, DNR reiterated its concerns, stating that "it is the Biological Opinion of the Department that the proposed action may, in conjunction with other cumulative impacts, jeopardize one or more listed species, may adversely affect a listed species' essential habitat and may degrade or adversely modify the Natural Areas." Pet'rs Ex. H (Letter from Tom Flattery, Office Director, Office of Realty and Environmental Planning, DNR, to David J. Kolaz, Chief, Bureau of Air, IEPA, at 1-2 (Oct. 10, 2003)) [hereinafter "DNR Follow-up Letter"].[57] DNR further noted

[57] IEPA argues that DNR's role in the permit review does not "relate directly to the issue of the soils and vegetation analysis." IEPA Response at 35. While it is true that DNR's October letter appears
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that "[d]irect application of the [NAAQS] standards to all flora and fauna associated with the permit action may not be sufficient to address all potential endpoints at this site. In order to respond to such issues, the [DNR] believes that prior to the facility coming on-line in approximately 2007, baseline conditions in the area should be quantified to determine if there is a need for appropriate avoidance, reduction, or compensation measures."[58] *Id*. at 2.

Several members of the public also raised concerns about the impacts of the proposed facility on nearby vegetation. For example, in its comments, the Lake County Conservation Alliance ("LCCA") asserted that the Midewin is "a site of high recreational value" as that term is used in the NSR Manual and that "Indeck has to conduct a detailed soil and vegetation inventory." Pet'rs Ex. AAA (Comment of Verena Owen, LCCA at 12 (June 28, 2003)) [hereinafter "LCCA Comments"]. LCCA also pointed out that the NSR Manual states that "there are sensitive species which may be harmed by long term exposure to low concentrations of pollutants for which there are no NAAQS" and "indicates that under certain circumstances the [soil and vegetation] analysis has to go beyond a simple screening." *Id*. LCCA argued that "[t]he sensitive ecology of a prairie is such a special circumstance." *Id*. LCCA also argued that in addition to criteria pollutants, the proposed facility "has the potential to emit significant amounts of sulfuric acid mist, fluoride, and beryllium, as well as mercury," and that a source must demonstrate that "there will not be any impact on soils, visibility and vegetation." *Id*. at 9. The Sierra Club and the American Lung Association of Metropolitan Chicago also submitted comments raising a host of issues, *see* Pet'rs Ex. D (Comments of Bruce E. Niles, Sierra Club, & Brian Urbaszewski, American Lung Association of Metropolitan Chicago, at 5-7, 10, 12 (June 26, 2003)) [hereinafter "Sierra Club Comment"], which, among other things, asserted that: (1) the draft permit failed to mention the fact that the proposed facility will abut the Midewin, which harbors 348 species of native plants, among them a number of rare plants protected under state and federal laws, *id*. at 6; (2) there was insufficient information in the application regarding what pollutants the facility will emit, how much,

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(continued)
to be part of an exchange between IEPA and DNR regarding a state consultation process, *see* DNR Follow-up Letter at 1 (noting in the first paragraph that the letter addresses "consultation pursuant to Title 17 of the Illinois Administrative Code 1075.40"), the points made in both of DNR's letters are clearly germane to soil and vegetation analysis and are part of the administrative record for the permit. Furthermore, it is not entirely clear what the intent of DNR's September 30 letter is and whether it was intended, at least in part, as a comment on the draft permit. In any case, DNR's letter essentially reiterates the points made in the Forest Service's letter, which was clearly intended as a comment on the draft permit. *See* USFS Letter at 1 (addressed to IEPA's Hearing Officer and stating that the Forest Service "appreciates the opportunity to comment" on Indeck's application for a permit).

[58] This appears to be the letter (and the language in that letter) IEPA relied upon to impose Source-Wide Condition 7. Notably, DNR's request for "baseline conditions" emphasizes the lack of this information in the draft permit documents.

and what impacts such pollutants will have on the Midewin's vegetation, *id*. at 10; and (3) IEPA failed to consider the adverse impacts from cooling tower mist, including "where these chemicals are likely to be deposited and the impacts on the Midewin, especially its * * * rare plant communities," *id*. at 12.

3. *Responses to Comments*

IEPA's efforts to address comments on this issue are reflected in its Responsiveness Summary.[59] Unfortunately, IEPA's responses are largely conclusory and do not provide or reference any more detailed analyses that support its conclusions.[60] *See* Responsiveness Summary at 20-24. For example, in response to one of the comments raising concerns about the impact of particulate matter on the leafy clover, IEPA stated that "the amount of permitted particulate matter emission is * * * trivial. No impact should be anticipated." *See* Responsiveness Summary at 21 (Response #54). But IEPA did not support its statement that the impact would be "trivial" with any calculations, additional discussion, or evidence in the record. As another example, in responding to comments pointing out that the emissions from the facility are precursors to acid rain and that the Midewin contains sensitive habitats and sensitive, threatened or endangered species, IEPA responded that "[a]cid rain is generally a 'transport' phenomenon" and that "a localized contribution to acid rains should not be anticipated." *Id*. at 21 (Response #53). IEPA did not cite to any analysis in the record that either supported its conclusion that a localized effect on the Midewin and its species was not likely or more deeply considered the impacts of the acidic emissions on the alkaline soils of the Midewin and the sensitive vegetation that live therein. As yet another example, in responding to comments challenging the adequacy of the soils and vegetation analysis, IEPA essentially responded that no impacts should be anticipated as a result of the emissions of the proposed plant and that the evaluation of the effects of the emissions on soil and vegetation was included in the application. *Id*. at 22 (Response #56). When discussing the impacts on vegetation, IEPA noted

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[59] IEPA also notes that Indeck submitted written responses to IEPA on this issue (as well as other issues) which are part of the record in this matter. IEPA Response at 19 (citing Resp't Ex. F). In Indeck's response, however, although Indeck acknowledges that comments had been submitted questioning whether the Midewin would be adversely affected by emissions from its proposed facility, Indeck merely reiterated its previous soils and vegetation findings and conclusions. *See* Resp't Ex. F. Thus, Indeck's response on these points does not provide any additional support for IEPA's conclusions.

[60] We note that, in considering IEPA's responses to comments, it is difficult at times to determine which comments IEPA was intending to address because it did not specifically cite which commenter it was addressing. We do not mean to suggest that this is improper, as a permit issuer may lump comments together in responding to comments. *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490, 578 (EAB 2006); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 583 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d. Cir. 1999). It may, however, make it more difficult to discern which response went with which comment and, in this case, whether IEPA responded to any of the comments from the federal and state agencies.

that the analysis showed that "the ambient concentrations of pollutants, other than ozone, would be far less than the screening levels developed by USEPA to protect sensitive vegetation, which represent the minimum reported concentrations of pollutants at which damage or growth effects to vegetation may occur." *Id*. Thus, IEPA again appears to have been relying upon Indeck's initial conclusions, which were based entirely on the 1980 Screening Procedure analysis, even though doubt had been cast by the comments on the sufficiency of that analysis in relation to plant species at the Midewin.

4. *Board Analysis of Adequacy of the Soilsand Vegetation Analysis*[61]

Overall, we, too, are struck by the remarkably low profile the proximity of a nationally protected prairie – essentially a preservation site for vegetation of national and historic significance – assumed in IEPA's approach to the process of developing the permit before us. The fact that such a preserve is adjacent to, and apparently downwind from, the site for a proposed power plant would presumably have attracted IEPA's attention to a significant degree, and by all rights should have featured prominently in the notice given the public concerning the permit. Yet, the issue instead appears to have been given secondary status, to the point of not being referenced at all in the public notice. This strikes us as not only unfortunate but also the stuff of which legal vulnerability is made.

As summarized above, Petitioners generally challenge IEPA's soil and vegetation analysis for failing to consider adequately the proposed facility's impacts on the Midewin and its vegetation; they also claim that IEPA failed to adequately respond to comments on this issue. As part of their general challenge, Petitioners more specifically argue that the failure to conduct an inventory of the Midewin's soils and vegetation was erroneous.[62] Amended Petition at 14; Pet'rs Reply at 12. Petitioners also point to Source-Wide Condition 7 as evidence that the initial soils

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[61] As a preliminary matter, we note that, in their Petition, Petitioners seem to inaccurately portray the soils and vegetation analysis as being a part of the *BACT* analysis. *See, e.g.*, Amended Petition at 12. As we discussed above in Part I.A.2, the soils and vegetation analysis is actually a part of the "additional impacts analysis," which is a PSD requirement separate from the BACT analysis. *See supra* Part I.A.2.c. Consequently, although we consider whether there was error associated with the additional impacts analysis, we do not consider the "lawfulness" of the BACT limits in this section.

[62] IEPA maintains that the arguments Petitioners raise on appeal were not preserved for Board review due to lack of specificity at the comment stage. IEPA Response at 21, 36-37. We disagree. The record reveals that the concerns raised by various commenters during the public comment period about the impact of the proposed plant on the Midewin's soil and vegetation bear a sufficient relationship to the arguments on appeal to serve as a predicate for those arguments. *See* Responsiveness Summary at 20-22 (Comments #52-54, 56) (raising concerns about the impact of the proposed plant on the Midewin and its sensitive habitat); LCCA Comments (specifically raising concerns about the lack of consideration of the Midewin Prairie in the soils and vegetation analysis); *see also* Sierra Club Comment at 5-7, 10, 12 (June 26, 2003); USFS Comment at 1-2.

and vegetation analysis was inadequate. Petitioners also point to at least three other types of soils and vegetation impacts that IEPA allegedly ignored. We consider these interrelated series of challenges together below.

As discussed more fully below, upon consideration of the statute, regulations, Agency guidance documents, and comments on the draft permit, we conclude that IEPA's response to comments on this issue was deficient and that, based on the record references we have been provided, its substantive conclusions were inadequately supported. Our starting point is the CAA itself, which mandates that, "in determining the effect of emissions from a proposed facility on any air quality control region," the Administrator promulgate regulations that "require an *analysis of the* ambient air quality, climate and meteorology, terrain, *soils and vegetation*, and visibility *at the site* of the proposed major emitting facility *and in the area potentially affected by the emissions from such facility*." CAA § 165(e)(3)(B), 42 U.S.C. § 7475(e)(3)(B). In requiring an "analysis * * * of the soils and vegetation * * * at the site of * * * and in the area potentially affected" by the facility "in determining the effects of the emissions," the language of the statute contemplates a comparative analysis of some kind between the existing baseline conditions of soils and vegetation at the site and in the potentially affected area, and the effects of the emissions on such baseline conditions. The statute does not, however, elucidate further on precisely what the scope of such an inquiry would be. The regulation implementing this statutory provision is likewise silent on this point.[63]

Notably, beyond requiring an analysis of soils and vegetation, the statute is also prescriptive in terms of the timing of the analysis, requiring that the results of the soil and vegetation analysis "shall be available at the time of the public hearing on the application for such permit." CAA § 165(e)(3)(C), 42 U.S.C. § 7475(e)(3)(C); *see also* CAA § 160(5), 165(a)(2), 42 U.S.C. § 7470(5), 7475(a)(2). As we will discuss later, this temporal dimension of the statute is of some consequence in the matter before us.

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[63] The regulation merely provides that:

> The 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 or other growth associated with the source or modification. The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value.

40 C.F.R. § 52.21(o)(1). While the regulation itself does not specifically require a baseline assessment of the existing soils and vegetation, presumably such an assessment would necessarily be part of the inquiry into whether the proposed source would impair the soils and vegetation. Furthermore, in order to determine whether there is any vegetation of significant commercial or recreational value for which an analysis would need to be performed, one would presumably need to know what plant species were at issue.

In its effort to satisfy the requirements of CAA § 165(e)(3), IEPA relied upon Indeck's application of the 1980 Screening Procedure. Petitioners argue that the IEPA's analysis should not have ended with a "screening" analysis. For several reasons, we agree. First, there is ample indication in the Screening Procedure itself that, in keeping with a concept of a "screening" tool, the analysis provided in the Screening Procedure may in some cases be incomplete and preliminary. In its overview section, for example, the 1980 Screening Procedure states as follows:

> In keeping with the screening approach, the procedure provides conservative, *not definitive results*. * * * The estimation of potential impacts on plants, animals, and soils is extremely difficult. The screening concentrations provided here are not necessarily safe levels nor are they levels above which concentrations will necessarily cause harm in a particular situation. However, *a source which passes through the screen without being flagged for detailed analysis cannot necessarily be considered safe*.

1980 Screening Procedure at 2-3 (emphasis added).

Additionally, there are indications that the Screening Procedure does not purport to be complete in its coverage. The guidance observes in this regard, "[i]deally, the screening procedure should address the impacts of all the pollutants currently regulated under the [CAA], but as shown in Table 2.1, screening concentrations were found for only half of the regulated pollutants." *Id*. at 4. In fact, the guidance can only be used to screen for potential effects caused by concentrations of the pollutants in the ambient air for only seven pollutants because, at the time the guidance was developed, there were only sufficient data for those seven pollutants. *Id*. at 5; *see also id.* at 11, tbl. 3.1 (listing vegetation sensitivity levels for seven pollutants: sulfur dioxide, ozone, nitrogen oxide, carbon monoxide, sulfuric acid, ethylene, and fluorine). Also, the guidance notes that there was a lack of data on chronic effects when it was developed. In short, the 1980 Screening Procedure does not purport to address a number of pollutants with respect to which concerns have been raised here, including sulfuric acid mist, volatile organic materials (VOM), hydrogen chloride, and beryllium,[64] and it does not consider the kinds of chronic effects that may be germane to a protected area like the Midewin.

Furthermore, the species sensitivity data in the 1980 Screening Procedure are more than twenty-six years old and primarily rely upon crop and tree species, not other native species. *See id.*, app. B. The guidance notes that "[e]ffects data for plants, animals, and soils are under constant revision and reevaluation." *Id*. at 3.

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[64] USFS Comment at 2; LCCA Comment at 12; Sierra Club Comment at 12.

Thus, for example, while it does include several *commercial* species of clover, *see* Resp't Ex. I, app. B, the clover species of concern here (the leafy prairie clover), does not seem to be included in the list. Likewise, another species identified by commenters as present at the Midewin – the eastern prairie fringed orchid – is plainly not addressed by the guidance. Notably, the 1980 Screening Procedure concedes that "species more sensitive to particular pollutants than species considered in th[e] study probably exist." *Id*. at 2. Commenters observed that the Midewin contains a number of such potentially more sensitive plant species.

A second concern regarding reliance solely on the 1980 Screening Procedure is that it is not the most recent guidance by the Agency on this issue. The 1990 NSR Manual, which has been widely deployed as a guidance document in PSD reviews, stands as a more recent expression of the Agency's thinking in this regard.[65] *E.g., In re Kendall New Century Dev.*, 11 E.A.D. 40, 43 n.3 (EAB 2003); *In re Three Mountain Power, LLC*, 10 E.A.D. 39, 42 (EAB 2001); *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 112 n.11, 130 & n.33 (EAB 1997); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 238 (EAB 2000) (considering the NSR Manual's guidance regarding the soils and vegetation analysis).

With respect to the soils and vegetation analysis, the NSR Manual states that such analysis "should be based on an inventory of the soils and vegetation types found in the impact area." NSR Manual at D.4. This "inventory" is apparently a "list of the soils and vegetation types indigenous to the impact area." *Id*. at D.11. The Manual further states that "[t]his inventory should include all vegetation with any commercial or recreational value. This inventory may be available from conservation groups, State agencies, and universities." *Id*. at D.4-.5. According to the example in the Manual, the applicant would determine the sensitivities of the plant species listed in the inventory to the applicable pollutants that would be emitted from the facility and compare this information to the estimates of pollutant concentrations calculated in the air quality modeling analysis (conducted pursuant to 40 C.F.R. § 52.21(m)) in order to determine whether there are any local plant species that may potentially be sensitive to the facility's projected emissions. *Id*. at D.11-.12. For those plants that show potential sensitivity, a more careful examination would be conducted. *Id*. Plainly, the NSR Manual contem-

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[65] Although it is not a binding Agency regulation, the NSR Manual has been looked to by this Board on many occasions as a statement of the Agency's thinking on certain PSD issues, including the soils and vegetation analysis. *See supra* note 13; *see also Steel Dynamics*, 9 E.A.D. 238; *Kawaihae*, 7 E.A.D. at 130 & n.33; *see also Kendall*, 11 E.A.D. at 43 n.3; *Knauf I*, 8 E.A.D. at 129 n.13 (EAB 1999); *In re Rockgen Energy Ctr.*, 8 E.A.D. 536, 542 n.10 (EAB 1999); *In re AES P.R., L.P.*, 8 E.A.D. 324, 331 n.8 (EAB 1999). However, because the NSR Manual is guidance, we have held that strict application of the methodologies described in the NSR manual is not mandatory. *In re General Motors, Inc.*, 10 E.A.D. 360, 366 (EAB 2002); *Three Mountain Power*, 10 E.A.D. at 42; *Knauf I*, 8 E.A.D. at 129 n.14, 134 & n.25.

plates the development of site-specific information that goes beyond the scope of simple screening under the 1980 Screening Procedure.

As we have explained in other cases, given that the NSR Manual is guidance, we will not find a PSD permit deficient "simply because the permitting authority deviated from the NSR Manual." *Knauf I*, 8 E.A.D. at 129-30 n.14; *see also General Motors, Inc.*, 10 E.A.D. 360, 366 (EAB 2002) (favorably citing *Knauf's* language). On the other hand, we have also explained that, in cases where the permitting authority deviates from the NSR Manual, we expect an analysis that is at least as detailed as that contemplated by the NSR Manual. *Knauf I*, 8 E.A.D. at 134 n. 25; *see also id.* at 129-30 n.14 (noting that, in such cases, the Board "would scrutinize such a [non-NSR Manual based] determination carefully to ensure that all regulatory criteria were considered and applied appropriately"). Based on the record before us, that comparability is plainly lacking.

At bottom, we agree with Petitioners that, in view of the proximity of the Indeck facility to a national vegetation preserve and the comments received pertaining to the draft permit identifying a number of problems with Indeck's analysis under the 1980 Screening Procedure, IEPA's response to the comments and its record support for its conclusions regarding soil and vegetation impacts were lacking. IEPA's provision of only conclusory responses to the comments in its Responsiveness Summary and its failure to connect such responses to supporting documents in the record leave the impression that IEPA was relying entirely on Indeck's analysis under the 1980 Screening Procedure in the face of comments putting the adequacy of that analysis fairly at issue.[66] Thus, we find that the record does not reflect a sufficient response by IEPA to the comments or a reasoned basis for its conclusions regarding vegetation impacts.[67] *See In re Haw. Elec.*

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[66] Although it is not altogether clear from the record, it appears that the 1980 Screening Procedure may have been the guidance used by applicants and permit issuers to perform the soils and vegetation analysis prior to the issuance of the NSR Manual in 1990. It is not clear, however, whether EPA's Office of Air and Radiation and Office of General Counsel view the Screening Procedure as having continued vitality in the wake of the NSR Manual. For purposes of this decision, we stop short of suggesting that the 1980 Screening procedure no longer has stand-alone utility. Our decision stands only for the proposition that reliance on the Screening Procedure may be insufficient in the face of site-specific concerns that plainly call the adequacy of that analysis into question. Deployment of the NSR methodology would appear to offer a safeguard against the analytical shortfalls observed here.

[67] We recognize that the question regarding the adequacy of the soils and vegetation issue is essentially a scientific one, with respect to which we ordinarily give substantial deference to the permitting agency. As we have explained on many occasions, the Board assigns a particularly heavy burden to a petitioner seeking review of a permit based on issues that are fundamentally scientific or technical in nature. *E.g., In re Peabody W. Coal Co.*, 12 E.A.D. 22, 33-34 (EAB 2005); *In re Dominion Energy Brayton Point*, 12 E.A.D. 490, 510-11 (EAB 2005); *In re Steel Dynamics, Inc.*, 9 E.A.D. 163, 201 (EAB 2000). Thus, "when issues raised on appeal challenge a [permit issuer's] technical judgments, clear error or a reviewable exercise of discretion is not established simply because petition-

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Light Co., Inc., 8 E.A.D. 66, 99-105 (EAB 1998)(remanding PSD permit despite technical nature of issue on appeal, in part because permit issuer failed to address public comments that raised questions about the adequacy of the air quality analysis).

Under the circumstances at hand, we would have expected that IEPA's Responsiveness Summary would, at a minimum, indicate clearly whether IEPA was relying on any analysis beyond that generated through Indeck's application of the 1980 Screening Procedure in reaching its conclusions; if so, what that additional body of information was and where it can be found in the record; and, if not, how that analysis alone satisfactorily responds to the comments on the draft permit, ensures comparability with the approach envisioned by the NSR Manual, and provides reasonable assurance that the Midewin's grasslands will not be adversely affected by emissions from Indeck's facility. This it plainly failed to do. In light of the statute, the NSR Manual guidance, and the concerns raised by commenters, we conclude that the permit decision before us requires an analysis of the impact of the proposed facility's emissions on plant species more thorough than that reflected in the Responsiveness Summary and the supporting documents referenced in the record.[68]

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ers document a difference of opinion or an alternative theory regarding a technical matter. In cases where the views of the [permit issuer] and the petitioner indicate bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the [permit issuer]." *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567 (EAB 1998); *accord Peabody*, 12 E.A.D. at 33-34; *Steel Dynamics*, 9 E.A.D. at 201. Accordingly, when the Board is presented with conflicting expert opinions over technical issues, "we look to determine whether the record demonstrates that the [permit issuer] duly considered the issues raised in the comments and whether the approach ultimately adopted by the [permit issuer] is rational in light of all the information in the record." *In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *accord In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001); *NE Hub*, 7 E.A.D. at 568. This being said, the permit issuer's rationale for its conclusions must be adequately explained and supported in the record. *Moscow*, 10 E.A.D. at 142; *NE Hub*, 7 E.A.D. at 568. As we noted in *In re Government of D.C. Municipal Separate Sewer System*, "[w]ithout an articulation by the permit writer of his analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirement of rationality." 10 E.A.D. at 342; *Knauf I*, 8 E.A.D. at 175 (remanding permit because "there [we]re no details regarding [the permitting authority's] determination in the administrative record" with which to "judge the adequacy of the response"); *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417 (EAB 1997) (explaining that the permit issuer "must articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions" (quoting *In re Carolina Power & Light Co.*, 1 E.A.D. 448, 451 (Acting Adm'r 1978))); *In re McGowan*, 2 E.A.D. 604, 606-07 (Adm'r 1988) (finding that the "total lack of response" to the comment cannot be cured by reference to an earlier statement because that statement "merely provides a conclusion without supportive reasoning").

[68] On appeal, IEPA argues that following the public comment period, it weighed public concerns about the Midewin and considered different informational sources about the Midewin, the leafy prairie clover, and state and federal endangered species. IEPA Response at 42. IEPA cites to Exhibits G and T. *Id*. These documents appear to be background information on the clover species and not an
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Consequently, we remand the permit[69] so that IEPA can either (1) augment its response to comments to clarify how its decision both comports with the requirements for a more rigorous analysis and addresses the comments that were received on this issue, or (2) perform or consider analysis not presently in the record[70] sufficient to address the concerns expressed in this opinion.[71] If the latter

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analysis of the impacts Indeck's facility may have on the species. Thus, we do not see that they constitute an analysis of the potential impacts of the proposed facility on the sensitive species in the Midewin. IEPA further argues that a review of those resources did not reveal any evidence contradicting the findings presented in Indeck's soil and vegetation analysis. *Id*. IEPA did not, however, explain in its response to comments the bases for its conclusions in this regard, and we are not aware of any other document in the administrative record expressing IEPA's rationale. The response to the amended petition seems to be the first place where IEPA provides an articulation. As the Board has stated in the past, a permit issuer must articulate the reasons for its conclusion and must adequately document its decisionmaking as part of the permit decision itself and not for the first time on appeal. *In re Chem. Waste Mgmt*, 6 E.A.D. 144, 151-52 (EAB 1995) (declining to rely on rationale of permit issuer raised for the first time on appeal); *In re Amoco Oil Co.*, 4 E.A.D. 954, 964 (EAB 1993) (remanding issue where permit issuer's rationale was articulated for the first time on appeal so that the permit issuer could either "provide a detailed explanation supported by those portions of the administrative record" not currently before the Board or "reopen the permit proceedings to supplement the administrative record with such information"); *In re Waste Techs. Indus*., 4 E.A.D. 106, 114 (EAB 1992) (rejecting argument which was a post hoc decision by the permit issuer raised in response to the appeal); *see also In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417-18.

[69] Our conclusion is consistent with our decision in *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107 (EAB 1997), where we also considered a challenge to a soils and vegetation analysis. There, in denying review of the permit, we stated that the proposed facility owner's analysis "showed that the site is 'thinly vegetated' with non-indigenous plant species, has rocky soil, and has 'very poor productivity potential for agricultural, orchard and grazing uses.'" *Id*. at 130 (citing the administrative record). Thus, in that case, the permit applicant had performed some kind of baseline analysis of the vegetation and soils in the area. Furthermore, unlike here, the petitioners in that case did not provide any information that the soils and vegetation had "any significant commercial or recreational value that would be negatively impacted by the plant" or that there were "sensitive plant species that would be harmed by exposure to concentrations of pollutants below the secondary NAAQS." *Id*.

[70] We note that as part of the ESA consultation process, Region 5 apparently performed a detailed analysis of the facility's likely impacts on plant species at the Midewin, compiling several hundred pages of modeling and other data, seemingly using already-existing information. While we have not considered the sufficiency of that analysis with respect to the questions before us, it would appear that a good deal of work has already been done. Significantly, reliance by IEPA on such analytical materials not presently part of the record for the PSD permit will not save IEPA from the public notice and comment problem referenced below, as these materials have not yet been subjected to public scrutiny under the PSD permitting process. Also, we offer no view at this juncture on the extent to which IEPA may appropriately rely on FWS's "no significant impact" determination under the ESA based on any such analysis, other than to observe first, that the universe of species of concern from an ESA perspective is not necessarily coextensive with the universe of species present at the Midewin, and second, that IEPA has an independent obligation under the CAA pertaining to impacts to soils and vegetation.

[71] We would expect any such analysis to be responsive to the issues raised by all commenters, including the Forest Service, and to include a baseline assessment of those species currently located at
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course is taken,[72] IEPA will need to solicit public comment on the new analysis because, as we have noted, the CAA specifically provides that the results of the soil and vegetation analysis "shall be available at the time of the public hearing on the application for such permit."[73] CAA § 165(e)(3)(C), 42 U.S.C. § 7475(e)(3)(C); *see also* CAA § 160(5), 165(a)(2), 42 U.S.C. § 7470(5), 7475(a)(2); *In re Haw. Elec. Light Co., Inc.*, 8 E.A.D. 66, 102 (EAB 1998) (remanding PSD permit and ordering permit issuer to prepare updated air quality analysis followed by notice and opportunity for comments because new information, relied upon by permit issuer on appeal, was not made available during the public comment period and was not included in the record).

We should note that the deficiency discussed above is not mitigated by IEPA's inclusion in the final permit of a condition requiring Indeck to "*compile information on* soil conditions (pH, nutrient levels, trace element content, buffering capacity, etc.) and *the condition of the vegetation* (impact of air pollution and health as indicated by features, rate of growth, etc.) in the [Midewin] as would *potentially be affected* by pollutants emitted by the proposed plant."[74] Permit at 10 (Source-Wide Condition 7). While this condition appears to require Indeck to obtain much of the very information that would support an appropriate analysis of soils and vegetation, it again does not square with the statutory requirement that such analysis "be available at the time of the public hearing on the application for

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potentially affected areas and an analysis of the impacts of the emissions from the proposed facility on those species.

[72] While we are not foreclosing the possibility of IEPA's being able to point to additional information in the record that supports its conclusion and revise its response to comments without needing to seek public comment, based on our review of the record, we have doubts about the viability of this approach.

[73] As we summarized earlier in this section, Petitioners commented below and argue here that the proposed emissions from Indeck's facility threatens the Midewin and that there are at least three types of soils and vegetation impacts that Indeck and IEPA allegedly ignored: (1) impacts associated with regulated pollutants that do not have ambient air quality standards; (2) Indeck's contribution to ozone exceedances; and (3) the level of protection ambient air quality standards provide to sensitive species in the Midewin. Amended Petition at 15-17. In light of the fact that we are remanding the permit to ensure that the record contains an analysis that speaks to unaddressed comments pertaining to the Midewin, we need not consider these arguments further at this time.

[74] Source-Wide Condition 7 also requires that Indeck "review the existing data available for the area and ongoing data collection efforts. The Permittee shall also solicit recommendations on the scope of further study, including species that should be addressed * * * ." Permit at 10. It further contemplates additional monitoring of the Midewin during operation of the plant. *E.g.*, Source-Wide Condition 7(a)(iv) (requiring a report containing information collected following the startup of the plant).

such permit."[75] CAA § 165(e)(3)(C), 42 U.S.C. § 7475(e)(3)(C).

C. *Consideration of Low-Sulfur Coal in BACT Analysis*

The third challenge Petitioners raise on appeal is to Indeck's control alternative analysis. The first step in the "top-down" process for BACT determinations, explained earlier in this decision,[76] is the identification of all potentially applicable control alternatives. *See* NSR Manual at B.10. Potential applicable control alternatives include, among other things, the use of inherently lower-emitting processes or practices (i.e., the use of materials and production processes and work practices that prevent emissions and result in lower "production-specific" emissions). *Id*. Cleaner forms of the fuel proposed by the source fall into this category.[77]

As previously noted, Indeck intends to use Illinois bituminous coal as its primary fuel.[78] Illinois bituminous coal is known for its relatively high sulfur content. On appeal, Petitioners argue that the SO_2 limits in Indeck's permit do not reflect BACT because Indeck did not consider the use of low-sulfur coal as part of its alternative analysis. *See* Amended Petition at 19-22. According to Petitioners, Indeck failed to consider the emission reductions that could result from restricting its fuel choice to low-sulfur coal. *Id.* at 19. Therefore, Petitioners reason, without credible consideration of low-sulfur coal as a readily available clean fuel, the BACT limit does not reflect the maximum degree of sulfur reduction. *Id.* at 20. In addition, Petitioners argue further, Indeck's permit contains no meaningful restrictions on the sulfur content of the coal Indeck may burn. *Id.* at 6, 20. Petitioners also contend that IEPA failed to respond to comments on this issue. *Id*. at 20.

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[75] Petitioners also challenge Source-Wide Condition 7 as being "previously-unseen" and not a "logical outgrowth" of the draft permit. Amended Petition at 15. In so arguing, Petitioners are raising a procedural issue regarding this condition. We think, however, that Petitioners' main contention concerning this condition is that the analysis required by the condition should have been part of Indeck's original analysis in its permit application. As we have already agreed with this more fundamental contention, we do not consider Petitioners' procedural argument further.

[76] *See supra* Part I.A.2.b.

[77] In determining BACT the permitting authority must assess (for each pollutant) the maximum degree of emissions reduction achievable "through application of production processes and available methods, systems and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques," considering various factors such as energy, environmental, and economic impacts. CAA § 169(3); 42 U.S.C. § 7479(3). The Board has consistently held that "in deciding what constitutes BACT, the Agency must consider both the cleanliness of the fuel and the use of add-on pollution control devices." *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 134 (1994) (citing *Hawaiian Commercial & Sugar Co.*, 4 E.A.D. 95, 99 n.7 (EAB 1992)); *see also*, *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 794 n.39 (Adm'r 1992). Thus, "proper BACT analysis must include consideration of cleaner forms of the fuel proposed by the source." *Inter-Power*, 5 E.A.D. at 145.

[78] *See supra* note 22.

Upon review, we conclude that Petitioners failed to preserve these arguments for Board review. Petitioner's arguments on this issue are therefore rejected as a basis for review.

Our examination of the record does not show that the arguments Petitioners now raise on appeal were specifically raised during the public comment period on the draft permit.[79] As explained more fully below, the arguments raised during the comment period pertaining to Indeck's choice of fuel and alternative analysis revolved around Indeck's decision to use Illinois coal instead of natural gas. While some commenters raised concerns about the quality of the Illinois coal those comments were either vague (usually a one-sentence remark) or completely disconnected from the issue before us (solely focusing on the use of natural gas as an alternative to coal). In sum, none of the comments Petitioners rely on specifically addressed the use of low-sulfur coal as a viable alternative to the use of Illinois coal.

Indeed, Petitioners' own comments fall into the latter category (i.e., comments that focused on the use of natural gas). In commenting on IEPA's alternatives analysis Petitioners argued that the draft permit failed to consider other reasonable sites, production processes, and environmental control techniques. *See* Pet'rs Ex. D (Comments from the Sierra Club and the American Lung Association of Metropolitan Chicago at 5 (June 26, 2003)). Petitioners elaborated on what they believed were other production processes that IEPA and Indeck should have considered as follows:

> Indeck fails to consider other reasonable production processes, including natural gas instead of coal as the primary fuel. Natural gas offers substantial benefits over coal in this instance. As documented by the Chicago Legal Clinic and others, the 3426 E. 89th Street natural gas plant proposed in Chicago would emit substantially less emissions than Indeck's proposal for every single criteria pollutant, most every HAP, as well as generate only one-third of the carbon dioxide emissions. Other non-air quality benefits of natural gas include: lower stack height, no coal storage area directly impacting the Midewin, no coal trains, no mercury or other persistent organic pollutant emissions.

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[79] *See* 40 C.F.R. §§ 124.13, .19(a) (persons seeking review of a permit must demonstrate that any issues or arguments raised on appeal were previously raised during the public comment period on the draft permit, or were not reasonably ascertainable, or available at that time).

Id. at 13. Clearly, Petitioners' intention was to draw IEPA's and Indeck's attention to the use of natural gas as primary fuel. Petitioners made no reference to the use of low-sulfur coal as primary fuel.

In their petition, Petitioners also cite to various comments raised by other commenters, none of which address the use of low sulfur as an alternative to the type of coal Indeck proposes to burn. As noted above, some of these comments focused on the use of natural gas, and those that did not express a preference for the use of something other than coal were vague, unsubstantiated, or lacked specificity. For example, Petitioners cite to comments by Mr. and Mrs. Hayden Huckins, who expressed concerns about the use of Illinois coal and its quality. The Huckinses referenced other power plants that utilize low sulfur coal; their comments, however, were aimed at encouraging the use of natural gas, and not at suggesting that Indeck should use low sulfur coal as an alternative to Illinois coal. Their comments read as follows:

> Indeck Energy has now proposed to burn Illinois High Sulfur Coal which is very bad for anyone. (HEALTH Risks) Previously the IEPA had ruled back in the late 60's early 70's that all Illinois power plants had to change to a LOW sulfur coal due to the Health concerns and the Environment. So all of the Illinois power plants that were burning coal had to go West to Montana & Wyoming to receive coal that was cleaner burning at much higher cost. It amazes us that all of a sudden this ban on using this High Sulfur Coal from Illinois has been lifted, and now all is OK? How can this be? Has something changed as to our breathing clean fresh air?
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> * * *
>
> We are Definitely Against the use of using [sic] COAL, as the main source for combustion. Natural Gas is a much Safer and Cleaner alternative.
>
> * * *
>
> **Why do we need another Coal Fired Power Plant? * * * So Again WHY Do We Need Another Dirty Coal Fired Plant? Why should Elwood be the first to have this New type of plant built by Indeck when they ONLY built either Gas or WOOD powered plants that are approved and are running * * * .**

Pet'rs Ex. O (Mr. & Mrs. Hayden Huckins (June 20, 2003)). As the foregoing comments plainly demonstrate, like Petitioners, the Huckinses fundamentally questioned the use of coal as the source of combustion while advocating for the use of natural gas.

The other comments Petitioners rely upon are too vague and do not provide the requisite specificity required by the applicable regulations. *See, e.g.*, Pet'rs Ex. O (Citizens Against Ruining the Environment (June 17, 2003)) (stating that "Illinois coal is notoriously known as being the worst coal in the nation. This facility is not utilizing the most stringent technology available."); *id.* (Petition Against Indeck Proposed 660-MW Coal-Fired Generation Plant for the Village of Elwood, IL.) (articulating their concerns as follows: "Reasons Against: Air Pollution, * * * , Burning Illinois Coal will not meet IL pollution standards."); (Comments by Mrs. Deanna Colbert (June 18, 2003)) ("I do not want to look out my window and see three 550 feet tall smoke stacks' [sic] releasing all the pollution the EPA has mentioned. Not to mention listening to the rumble that the turbines and feed pumps will generate. I also understand there are dramatic water concerns that need to be addressed. I do not see how this project can be endorsed. Illinois has already deemed the local coal unsafe to burn and forced existing power plants to burn western coal (see attached article). The limestone technology proposed to 'clean' the coal has not been proven at this magnitude. How can we test something so close to resident's homes?"). These generalized comments about the quality of Illinois coal, the ability to meet pollution standards, and the propriety of using Illinois coal are insufficiently related to the issue raised in the petition to serve as a predicate for review.[80] *See In re Arecibo & Aguadilla Regional Wastewater*

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[80] Petitioners also argue that IEPA failed to respond to this line of comments. While it may be true that IEPA did not respond to each of these specific comments, we do not find clear error on IEPA's part. The regulation governing response to comments in a permit proceeding requires that the permit issuer "[b]riefly describe and respond to *all significant comments* * * * ." 40 C.F.R. § 124.17(a)(2)(emphasis added). This regulation does not require the permit issuer to respond to each comment in an individualized manner. *In re NE HUB Partners, L.P.*, 7 E.A.D. 561, 583 (EAB 1998). Further, it does not require the Region's response to be of the same length or level of detail as the comment. *See id.* (*citing In re Hoechst Celanese Corp.*, 2 E.A.D. 735, 739 n.7 (Adm'r 1989)). Moreover, the applicable rules do not require the permit issuer to respond in detail to all comments irrespective of their merit. The permit issuer need only "describe and respond to all significant comments on the draft permit," 40 C.F.R. § 124.17(a)(2), and its response can be in proportion to the substantive merit of the comments. *See In re Spokane Reg'l Waste-to-Energy Applicant*, 2 E.A.D. 809, 816 (Adm'r 1989) (quoting *Northside Sanitary Landfill, Inc. v. Lee M. Thomas*, 849 F.2d 1516, 1520 (D.C. Cir. 1988) ("[T]he 'dialogue' between administrative agencies and the public 'is a two-way street.' Just as 'the opportunity to comment is meaningless unless the agency responds to significant points raised by the public,' so too is the agency's opportunity to respond to those comments meaningless unless the interested party clearly states its position.") (citations omitted). While it is appropriate to hold permitting authorities accountable for a full and meaningful response to concerns fairly raised in public comments, such authorities are not expected to be prescient in their understanding of vague or imprecise comments. *In re Sutter Power Plant*, 8 E.A.D. 680, 694 (EAB 1999). In this case, IEPA responded to

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Treatment Plants, 12 E.A.D. 97, 117 (EAB 2005) ("Comments submitted during the comment period must be sufficiently specific. In evaluating whether to review an issue on appeal, this Board frequently has emphasized that the issue to be reviewed must have been *specifically raised* during the comment period.") (citing *In re New England Plating*, 9 E.A.D. 726, 732 (EAB 2001); *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230-31 (EAB 2000); *In re Maui Elec. Co.*, 8 E.A.D. 1, 9 (EAB 1998)). *See also, New England Plating*, 9 E.A.D. at 732 (denying review of issues raised on appeal that were not raised with the requisite specificity during the public comment period); *Maui*, 8 E.A.D. at 9-12; *In re Fla. Pulp & Paper Ass'n*, 6 E.A.D. 49, 54-55 (EAB 1995); *In re Pollution Control Indus. of Ind., Inc.*, 4 E.A.D. 162, 166-69 (EAB 1992).

The arguments raised below are distinctly different from the arguments Petitioners now raise on appeal. This is reflected in IEPA's response to these comments. That is, in responding to those comments that clearly stated a position, IEPA went on to address the differences in cost between gas and coal, explained how these fuels are not interchangeable, and why a new gas-fired power plant is not a realistic alternative to a new coal-fired power plant. *See* Responsiveness Summary at 39 (Response #110). Clearly IEPA addressed the issue brought to its attention, and nothing in its response indicates that IEPA viewed the foregoing comments as a request to consider low-sulfur coal as alternative fuel. To expect the permit issuer to have inferred from these comments the arguments Petitioners now raise on appeal is unreasonable under these circumstances. As the Board has previously stated, the requirement that an issue must have been raised during the comment period in order to preserve it for review is not an arbitrary hurdle placed in the path of potential petitioners. *See In re BP Cherry Point*, 12 E.A.D. 209, 219 (EAB 2005). Rather, the requirement serves an important function related to the efficiency and integrity of the overall administrative permitting scheme. *Id*. The intent of the rules is to ensure that the permitting authority first has the opportunity to address permit objections and to give some finality to the permitting process. *In re Sutter Power Plant*, 8 E.A.D. 670, 687 (EAB 1999). As we have explained, "[t]he effective, efficient and predictable administration of the permitting process demands that the permit issuer be given the opportunity to address potential problems with draft permits before they become final." *In re Teck Cominco*, 11 E.A.D. 457, 479 (EAB 2004) (quoting *In re Encogen Cogeneration Facility*, 9 E.A.D. 244, 249-50 (EAB 1999)). "In this manner, the permit issuer can make timely and appropriate adjustments to the permit determination, or, if no adjustments are made, the permit issuer can include an explanation of why none are

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those comments that clearly stated a position (i.e., use of natural gas versus coal), and we find its response to be in proportion to the substantive merit of the comments raised during the comment period related to this issue.

necessary." *In re Essex County (N.J.) Res. Recovery Facility*, 5 E.A.D. 218, 224 (EAB 1994).

In sum, the concerns raised below were too vague and did not sufficiently signal a concern that low-sulfur should be considered in the BACT analysis or that the SO_2 limit does not reflect BACT because Indeck will be using high sulfur coal. These arguments cannot be raised for the first time on appeal. To allow Petitioners to raise this issue at this stage would undermine the important policy of providing for efficiency, predictability, and finality in the permit process achieved by giving the permit issuer the opportunity of being the first to address any objections to the permit. *See, e.g., In re New England Plating*, 9 E.A.D. 729, 736-37; *see also In re Sutter Power Plant*, 8 E.A.D. 680, 687 (EAB 1999); *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 (EAB 1999). Therefore, we decline review of this issue.

D. *Fuel Restrictions*

Petitioners next challenge is to Unit-Specific conditions 1.12.b and 1.14.a. Permit Condition 1.12.b allows Indeck to burn "any solid fuel" in its CFB boilers. According to this provision, "[t]he Permittee shall notify the Illinois EPA in writing at least 30 days prior to initial firing of any solid fuel other than coal, petroleum coke or coal tailings in a boiler." Permit at 23 (Unit-Specific Condition 1.12: Notification). Permit Condition 1.14.a authorizes Indeck to use fuel from different suppliers. Specifically, permit Condition 1.14.a provides as follows: "The Permittee is authorized to use fuel from different suppliers in the boilers without prior notification to the Illinois EPA or revision of this permit." *Id.* at 24 (Unit-Specific Condition 1.14: Operational Flexibility/Anticipated Operating Scenarios).

On appeal, Petitioners object to permit Condition 1.12.a by arguing that the permit unlawfully allows Indeck to burn "any solid fuel" without defining such term or considering alternate fuels in its BACT analysis. Amended Petition at 22. Petitioners' objection to permit Condition 1.14.a is that the provision improperly allows Indeck to use fuel from different suppliers without prior notification to IEPA. *Id.* Petitioners argue that IEPA has an obligation to establish case-by-case, tailor-made BACT limits, and, according to Petitioners, the "'alternative fuel' provisions in Conditions 1.2 and 1.4 are neither tailor-made nor detailed." *Id*. at 23.

Notably, Petitioners do not explain why such restrictions are necessary. They also assume without explanation that fuel variation will affect the determination of BACT, and that the use of different fuels will result in emissions greater than those contemplated by the permit. In addition, it is not entirely clear how Petitioners' arguments regarding the permit's failure to restrict the types of fuel that Indeck may use, or the parties from whom Indeck may purchase its fuel, are different from their challenge to Indeck's alternatives analysis, where Petitioners

argue that IEPA failed to consider the emission reductions that could result from restricting its fuel choice to low-sulfur coal.

In any event, we need not resolve the substantive issues raised in the petition, as Petitioners have failed to satisfy threshold procedural requirements necessary for obtaining review.

With regard to permit Condition 1.12.a, Petitioners fail to explain why IEPA's response to comments is clearly erroneous. In responding to concerns about the use of supplemental fuels raised during the public comment period, IEPA explained that the use of supplemental fuel is appropriate in this case. Specifically, IEPA stated: "Provisions allowing the use of supplemental fuels is appropriate for a solid fuel fired boiler. This is demonstrated by other new "coal-fired" boilers that use fuels such as petroleum coke, as well as the use of such fuels at IGCC plants." Responsiveness Summary at 46 (Response #137). On appeal, however, Petitioners do not confront IEPA's response to comments and fail to explain why such response is clearly erroneous. This Board has held on numerous occasions that a petitioner's failure to address the permit issuer's response to comments is fatal to its request for review. *See, e.g.*, *In re Peabody Western Coal Co.*, 12 E.A.D. 22, 33 (EAB 2005) ("To obtain review, a petitioner must clearly and specifically identify the basis for its objection(s) to the permit, and explain why, in light of the permit issuer's rationale, the permit is clearly erroneous or otherwise deserving of review. In order to carry this burden the petitioner must address the permit issuer's responses to relevant comments made during the process of permit development.") (citing *In re Zion Energy*, LLC, 9 E.A.D. 701, 705 (EAB 2001); *see also Knauf II*, 9 E.A.D. at 5; *Knauf,I*, 8 E.A.D. at 127; *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997); *In re P.R. Elec. Power Auth.*, 6 E.A.D. 253, 255 (EAB 1995). We therefore deny review of permit Condition 1.12.a.

With respect to permit Condition 1.14.a, the arguments on appeal were not preserved for Board review, as no objections to this condition were raised during the public comment period. In order to demonstrate that an issue has been preserved for appeal a petitioner must show "that any issues being raised were raised during the public comment period." 40 C.F.R. §§ 124.13, 124.19(a); *In re BP Cherry Point*, 12 E.A.D. 209, 216 (EAB 2005); *In re Amerada Hess Corp. Port Reading Refinery*, 12 E.A.D. 1, 8 (EAB 2005); *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230 (EAB 2000)*; In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 249 (EAB 1999). Failure to preserve an issue for review is fatal to an appeal relative to that issue. Accordingly, we deny review of this argument.

E. *Excess Emissions During Startup, Shutdown & Malfunction Events*

Petitioner's fifth challenge on appeal is to the provisions in Indeck's permit exempting Indeck from complying with the emission limits for the CFB boilers

during periods of startup, shutdown and malfunction ("SSM events"). Specifically, Petitioners challenge Unit-Specific Condition 1.2.b and Table I,[81] which exempt Indeck from compliance with the short-term emission limitations for each of the CFB boilers.[82] Petitioners argue that these provisions are unlawful because they run counter to EPA policy and the purpose and requirements of BACT. *See* Amended Petition at 23-24. In Petitioners' words, "[i]Instead of requiring Indeck to carefully plan to minimize violations of short-term emission limits IEPA simply exempts Indeck from complying with short-term emission limits during SSM events altogether." *Id*. at 24. According to Petitioners, exclusions from otherwise applicable emission limits during SSM events are never appropriate under a BACT analysis. For this proposition, Petitioners rely on EPA guidance embodied in a memorandum from Kathleen M. Bennett, Assistant Administrator for Air, Noise, and Radiation, U.S. EPA, to Regional Administrators, Regions I-X (Sept. 28, 1982) ("1982 Bennett Memo")[83] and a memorandum from Steven A. Herman, Assistant Administrator for Enforcement and Compliance Assurance, U.S. EPA, to Regional Administrators, Regions I-X (Sept. 20, 1999) ("1999 Herman

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[81] Unit-Specific Condition 1.2.b provides: "The emissions from each boiler shall not exceed the following limits [referring to short-term emission limits] except during startup, shutdown and malfunction as addressed by Condition 1.2(e)." Permit at 12 (Unit-Specific Condition 1.2.b). This provision exempts Indeck from complying with short-term emission limits for: PM, SO_2, NO_x, CO and VOCs (VOM).

Similarly, Table I, which lists all the applicable emission limitations for each of the CFB boilers, provides: "Short-term emission rates do not apply during startup, shutdown or malfunction as addressed by Condition 1.6." Permit Attachments, tbl. I note 2. Thus again reflecting the exemption from short-term emission limits for: PM, SO_2, NO_x, CO, and VOCs (VOM). Table I also exempts compliance with short-term emission limits for Flourides and Sulfuric Acid Mist during SSM events.

[82] Notably, the permit establishes long-term emission limits (expressed in tons/year), *see* Permit Attachments, tbl. I note 2, which Indeck must comply with at all times, even during SSM events. *See* Permit at 17 (Unit-Specific Condition 1.7). In a recent Board decision on a PSD permit appeal, the permitting authority adopted a similar approach to the one IEPA adopted in this case (i.e., exempting permit holder from compliance with short-term emission limits during SSM events, but requiring compliance with long-term emission limits at all times). *See In re Indeck-Niles Energy Ctr*., PSD Appeal No. 04-01 (EAB, Sept. 30, 2004) (Unpub. Order). In that case, however, the petitioner did not challenge the permit provisions excluding compliance with short-term BACT limits during startup and shutdown events. *See id*. at n.9. The Board, therefore, did not reach the issue in that case.

[83] The Board has considered this guidance in other cases raising similar arguments. *See, e.g., In re Rockgen Energy Ctr*., 8 E.A.D. 536, 554 (EAB 1999); *In re Tallmadge Generating Station*, PSD Appeal No. 01-12 (EAB, May, 21, 2003) (Unpub. Order); *In re Indeck-Niles Energy Ctr*., PSD Appeal No. 04-01 (EAB, Sept., 30, 2004). Other related sources of guidance the Board has considered include a memorandum from John B. Rasnic, Director, Stationary Source Compliance Division, Office of Air Quality Planning and Standards, U.S. EPA to Linda M. Murphy, Director, Air, Pesticides and Toxics Management Division, U.S. EPA Region 1 (Jan. 28, 1993) ("Rasnic Memo"), and a memorandum from Kathleen M. Bennett, Assistant Administrator for Air, Noise, and Radiation, U.S. EPA, to Regional Administrators, Regions I-X (Feb. 15, 1983) ("1983 Bennet Memo"). *See RockGen*, 8 E.A.D. at 553 n.21.

Memo"). Finally, Petitioners argue that Unit-Specific Condition 1.6[84] – the permit provision that allegedly establishes some safeguards during SSM events – is unenforceable. Amended Petition at 24. In support of their argument, Petitioners point to what they believe are flaws in this condition, *see id*. at 24, 25, and further

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[84] Unit-Specific Condition 1.6 provides in pertinent part:

> a The Permittee shall operate each boiler and associated air pollution control equipment in accordance with good air pollution control practice to minimize emissions, by operating in accordance with detailed written operating procedures as it is safe to do so, which procedures at a minimum shall:
>
> > i Address startup, normal operation, and shutdown and malfunction events and provide for review of relevant operating parameters of the boiler systems during startup, shutdown and malfunction as necessary to make adjustments to reduce or eliminate any excess emissions.
> >
> > ii With respect to startup, address readily foreseeable startup scenarios, including so called "hot startups" when the operation of a boiler is only temporarily interrupted and provide for appropriate operating review of the operational condition of a boiler prior to initiating startup of the boiler.
> >
> > iii With respect to malfunction, identify and address likely malfunction events with specific programs of corrective actions and provide that upon occurrence of a malfunction that will result in emissions in excess of the applicable limits in Condition 1.2, the Permittee shall, as soon as practicable, repair the affected equipment, reduce the operating rate of the boiler or remove the boiler from service so that excess emissions cease.
>
> Consistent with the above, if the Permittee has maintained and operated a boiler and associated air pollution control equipment so that malfunctions are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin shutdown of the boiler within 90 minutes, unless the malfunction is expected to be repaired within 120 minutes or such shutdown could threaten the stability of the regional electrical power supply. In such case, shutdown of the system shall be undertaken when it is apparent that repair will not be accomplished within 120 minutes or shutdown will not endanger the regional power system. In no case shall shutdown of the boiler be delayed solely for the economic benefit of the Permittee.

Permit at 16 (Unit-Specific Condition 1.6: Operating Requirements).

argue that the plan required by the provision is not subject to public review.[85] *Id.* at 27.

IEPA argues that the permit does not provide a waiver of BACT during SSM events. Rather, IEPA explains, the permit establishes BACT during SSM events through work practices and operational standards. IEPA Response at 67. IEPA argues that in reviewing Indeck's application IEPA recognized that it was not technically feasible for Indeck to comply with the numerical emission limits set as BACT; therefore, instead of setting numeric limits IEPA considered methods to minimize emissions during SSM events. *Id.* at 60, 64-66. Citing 40 C.F.R. § 52.21(b)(12), IEPA argues that the regulations allow the use of work practices and operational standards in lieu of numerical limits during SSM events. *Id.* at 66. According to IEPA, the permit contains various provisions aimed at minimizing emissions during SSM events, namely: (1) Unit-Specific Condition 1.2.e,[86] which prescribes certain practices Indeck must employ during SSM events; (2) Unit-Condition 1.6, which, among other things, requires Indeck to employ good air pollution control practices and develop detailed written operating procedures; and (3) Source-Wide Condition 4.b, which requires Indeck to develop, implement and maintain written SSM plans, in accordance with 40 C.F.R. § 63.6(e)(3)(i)(A), (B), and (C).[87] *Id.* at 60-67, 69. Finally, IEPA argues that the

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[85] Petitioners refer to the requirements in Unit-Specific Condition 1.6 to operate each boiler and associated air pollution control equipment in accordance with good air pollution control practices and to develop detailed written operating procedures. According to Petitioners, these practices and procedures will not be subject to public review. Amended Petition at 27.

[86] Unit-Specific Conditions 1.2.e provides:

> The permittee shall use reasonable practices to minimize emissions during startup, shutdown and malfunction of a boiler as further addressed in Condition 1.6, including the following:
>
> i Use of natural gas, during startup to heat the boiler prior to initiating firing of solid fuel;
>
> ii Operation of the boiler and associated air pollution control equipment in accordance with written operating procedures that include startup, shutdown and malfunction plan(s); and
>
> iii Inspection, maintenance and repair of the boiler and associated air pollution control equipment in accordance with written maintenance procedures.

Permit at 14-15 (Unit-Specific Condition 1.2.e).

[87] Source-Wide Condition 4.b provides in part:

> The Permittee shall develop, implement, and maintain Startup, Shutdown, and Malfunction Plans (Plans) that describe, in detail, procedures for operating and maintaining the various emission units at the plant dur-

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provisions exempting short-term emissions only apply if a qualifying event occurs. *Id*. at 66.

It is well established that BACT requirements cannot be waived or otherwise ignored during periods of startup and shutdowns.[88] We, therefore, agree with Petitioners that under the PSD program automatic exclusions from otherwise applicable emission limits during SSM events are inappropriate. Indeed, EPA has, since 1977, disallowed automatic or blanket exemptions for excess emissions during startup, shutdown, maintenance, and malfunctions by defining most periods of excess emissions as "violations" of the applicable emission limitations.[89] [90] We discuss EPA's policy on automatic or blanket exemptions for excess emissions during SSM events in more detail later on in this decision. However, before we delve into EPA's SSM policy, we first consider whether and under what circumstances the PSD regulations allow the use of operational plans and work practices instead of numeric limits to satisfy BACT, as IEPA asserts.

We begin by analyzing the statutory and regulatory definition of BACT. As noted earlier, the statute and regulations define BACT as an emission limitation.[91] CAA § 169(3), 42 U.S.C. § 7479(3) ("[t]he term [BACT] means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under [the Act] emitted from or which results from any major emitting

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(continued)

> ing periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process, and air pollution control and monitoring equipment used to comply with the relevant emission standards. These Plans shall be developed to satisfy the purposes set forth in 40 CFR [§] 63.6(e)(3)(i)(A), (B), and (C). The Permittee shall develop its initial plans prior to the initial startup of an emission unit(s).

Permit at 8 (Source-Wide Condition 4.b).

[88] *In re Tallmadge Generating Station*, PSD Appeal No. 02-12, at 24 (EAB, May 21, 2003) (stating that EPA has issued several guidance documents over the years "clearly expressing the Agency's long-standing position that automatic exemptions for excess emissions during startup and shutdown periods cannot be reconciled with the directives of the CAA.").

[89] *See, e.g.*, Approval and Promulgation of Implementation Plans, 42 Fed. Reg. 21,472 (April 27, 1977); 1982 Bennett Memo (clarifying EPA policy on excess emissions in the SIP context); Rasnic Memo (clarifying EPA policy on automatic or blanket exemptions for excess emissions during startup, and shutdowns under PSD).

[90] As explained in more detailed below, *see infra* notes 99-100 & 102, not all periods of excess emissions during SSM events are considered violations. EPA has in very narrow circumstances exempted a source from complying with otherwise applicable BACT limits during SSM events.

[91] *See supra* Part I.A.2.b. (defining BACT). *See, e.g., In re Hillman Power Co., L.L.C.*, 10 E.A.D. 673, 690 (EAB 2002); *In re Three Mountain Power, L.L.C.*, 10 E.A.D. 39, 54 (EAB 2001); *In re Metcalf Energy Ctr.*, Order Denying Review, PSD Appeal Nos. 01-07 & 01-08, 13-14 (EAB, Aug. 10, 2001).

facility * * * ."); *see also* 40 C.F.R. § 52.21(b)(12). The CAA defines the term emission limitation (and also emission standard) as "a requirement established by the State or the Administrator which limits the *quantity, rate, or concentration* of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, *and any design, equipment, work practice or operational standard* promulgated under [the Act]." CAA § 302(k), 42 U.S.C. § 7602(k) (emphasis added). BACT ordinarily is expressed in numeric terms[92] or as a combination of numeric limits and design, equipment, work practices and/or operational standards.[93] In limited circumstances, however, the regulations allow the permitting authority to substitute work practices, operational standards, design or equipment limitations for numeric limits to satisfy BACT. Specifically, section 52.21(b)(12) allows the Administrator[94] to impose work practice standards and the like in lieu of an emission limitation when technological or economic limitations on the use of measurement methodologies make the imposition of an emission limitation infeasible. Section 52.21(b)(12) provides in pertinent part:

> If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

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[92] *See In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 128-29 n.12 (EAB 1999) ("*Knauf I*") ("An emission limitation is ordinarily expressed as a numerical limit on the rate of emissions.").

[93] *See In re Brooklyn Navy Yard Res. Recovery Facility*, 3 E.A.D. 867, 878 (Adm'r 1992) ("It is common for PSD permits to include a combination of emissions standards and work practices in the emission limitation for a given pollutant.").

[94] This would include a delegatee. *See* 40 C.F.R. § 52.21(u) (authorizing the Administrator to delegate his or her responsibilities for conducting prevention of significant deterioration review); *see also* 46 Fed. Reg. at 9582 (delegating federal PSD program authority in the state of Illinois to the IEPA).

40 C.F.R. § 52.21(b)(12).[95] Simply put, if measuring emissions is either technically or economically infeasible, the permitting authority may impose non-numeric limitations such as work practices, operational standards and/or design and equipment limitations instead of numeric limits. In setting non-numeric limitations the permitting authority must, to the extent possible, set forth the emission reductions expected from the implementation of these limitations. *Id*. We also read this provision as requiring the emissions reductions associated with non-numeric limitations to be equivalent to those emissions achieved by the application of BACT limits.

As noted above, IEPA argues that based on technical information Indeck submitted, IEPA determined that it would be technically infeasible for Indeck to comply with the short-term BACT numeric limits set forth in the permit. Specifically, IEPA argues as follows:

> In reviewing Indeck's application, the Illinois EPA recognized that it was not technically feasible for Indeck to comply with the numerical limits set as BACT during SSM of the CFB boilers. The Illinois EPA also recognized that it could be difficult to appropriately set limits for SSM events and to then verify compliance with any such limits that would be set. Accordingly, based upon the technical information submitted by Indeck, the Illinois EPA considered methods to minimize emissions during SSM.

IEPA Response at 60. Notably, IEPA has not argued that it is technically infeasible to establish any short-term BACT limits due to limitations in applying measurement methodologies to quantify emissions. While on appeal IEPA alludes to difficulties in verifying compliance, *id*., and states that "[f]or particulate matter and pollutants for which continuous emissions monitoring is not required * * * , the mass of emissions will not be precisely measured during SSM events," *id*. at 71,[96] IEPA does not appear to rely on these alleged difficulties when invoking section 52.21(b)(12). In other words, IEPA does not appear to claim that difficulties in measuring emissions during SSM events is the reason it cannot impose

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[95] The regulations adopt the statutory definition of BACT, augmented by the language quoted above. *Compare* CAA § 169(3), 42 U.S.C. § 7479(3) *with* 40 C.F.R. § 52.21 (b)(12). This additional language is essentially borrowed from section 111(h)(1) of the CAA, New Source Performance Standards ("NSPS"). Under the NSPS program, design, equipment, work practices and operational standards are used when it is infeasible to measure emissions. *See* CAA § 111(h), 42 U.S.C. § 7411(h); *In re Certainteed Corp.*, 1 E.A.D. 743, 748 n.10 (Adm'r 1982).

[96] In its response to the petition, IEPA does not identify those other "pollutants for which continuous emission monitoring is not required."

numeric limitations. However, even if we were to read these statements as a claim of technical infeasibility in measuring emissions, we have found no on-the-record determination of such infeasibility.[97]

IEPA's response focuses on a different kind of limitation. According to IEPA, the provision in section 52.21(b)(12) that allows substitution of design or work practice standards for BACT numeric limits can be triggered by technical limitations beyond those pertaining only to monitoring feasibility. IEPA argues that it relied on technical information Indeck submitted in its application. The technical information Indeck submitted explains that excess emissions may occur during startup operations and outlines the different phases Indeck's CFB Boilers will go through during startup. *See* IEPA Response at 60-62 (citing to Pet'rs Ex. K (Indeck's Supplemental Information), and Indeck's Application). In its application, Indeck explains the reasons why excess emissions may occur during startup, which reduce to having low boiler temperatures during the initial phases of boiler startup, and low furnace temperature, which will impede effective use of pollutant control technologies.[98] *Id.* at 59-60; Application at 4-3. The technological limitations Indeck identifies in its application appear to fall under a different category than the limitations section 52.21(b)(12) contemplates, in that they are principally design and operational constraints.

Historically, EPA has not treated design and operational constraints as a basis for exemption from numeric BACT limits during SSM events. *See, e.g.*, 42 Fed. Reg. 21,472; 1982 Bennett Memo; Rasnic Memo. Rather, exceedances of numeric BACT limits during SSM events have been ordinarily regarded as viola-

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[97] IEPA argues that it gave consideration to the design, operating practices and maintenance of the proposed facility, and that such consideration is reflected in the draft permit. IEPA Response at 68. We do not think this is a sufficient reference to or analysis of a problem associated with monitoring infeasibility. The BACT analysis is one of the most critical elements of the PSD permitting process. As such, pivotal determinations of this kind should be well documented in the administrative record. *See Knauf I*, 8 E.A.D. at 131.

[98] Indeck explains in its application the reasons why NO_x, CO, VOCs, and SO_2 may exceed the BACT numeric limits during SSM events. According to the application, NO_x emissions may be increased since the SNCR system will not be effective due to low boiler temperature during startup. Application at 4-3. Indeck expects CO and VOC emissions to increase due to low temperatures in the furnace during startup and the smoldering of residual solid fuel particles that may be present in the CFB. *Id*. As for SO_2, Indeck expects emissions to exceed short-term BACT limits during the second phase of startup due to low furnace temperature limiting injection of limestone in the CFB. *Id.*

Notably, the permit exempts Indeck from complying with short-term emission limits for PM. However, according to Indeck's application, PM "emissions during all phases of startup will be less than or equal to the proposed BACT emission rate." *Id.* at 4-3. Based solely on this statement we do not understand the need for exempting Indeck from complying with short-term emissions limits for PM during SSM events.

tions of the CAA,[99] and EPA has used enforcement discretion to excuse certain SSM-related exceedances.[100] In this regard, EPA has stated that:

> Startup and shutdown of process equipment are part of the normal operation of a source and should be accounted for in the planning, design and implementation of operating procedures for the process and control equipment. Accordingly, it is reasonable to expect that careful and prudent planning and design will eliminate violations of emission limitations during such periods.
>
> If excess emissions occur during routine start-up and shutdown of such equipment, they will be considered as having resulted from a malfunction[101] *only* if the source can demonstrate that such emissions were actually caused by sudden and unforeseeable breakdown in the equipment.
>
> Similarly scheduled maintenance is a predictable event which can be scheduled at the discretion of the operator,

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[99] Except for excess emissions during "infrequent short periods" as specified in footnote 102 below.

[100] This practice however does not preclude the permitting authority from exempting a source from applicable BACT limits (i.e., limits that apply during normal operation) and establishing secondary BACT limits that apply only during SSM events. Such secondary limits, while presumably less stringent than those applicable during normal operation must be, nonetheless, justified as BACT. *See In re Prairie State Generating Co.*, 13 E.A.D. 1, 85-89 (EAB 2006); *In re Rockgen Energy Ctr.*, 8 E.A.D. 536, 554 (EAB 1999); *In re Tallmadge Generating Station*, PSD Appeal No. 02-12, at 28 (EAB, May 21, 2003) ("If the [permitting authority] determines that compliance with the permit's BACT and other emission limits cannot be achieved during startup and shutdown despite best efforts, it should specify and carefully circumscribe in the permit the conditions under which [the permit holder] would be authorized to exceed these otherwise applicable emissions limits and establish * * * that such conditions are nonetheless in compliance with applicable requirements, including NAAQS and PSD increment provisions. The [permitting authority] may also wish to consider establishing secondary PSD limits that would apply to pollutants emitted during startup/shutdown periods; if it does so, such limits must be made part of the PSD permit and justified as BACT.").

[101] As previously explained, excess emissions occurring during SSM events have been traditionally considered violations of applicable emission limitations. Over the years, however, EPA has refined and supplemented its policy to allow some flexibility based on the circumstances. For instance, the Agency has adopted an "enforcement discretion approach" for excess emissions resulting from unavoidable malfunctions. The Agency considers the term "malfunction" to mean "a sudden and unavoidable breakdown of process or control equipment." 1982 Bennett Memo (Attachment at 1); 1983 Bennett (Attachment at 1). Under this approach, "the imposition of a penalty for sudden and unavoidable malfunctions caused by circumstances entirely beyond the control of the owner and/or operator is not appropriate." 1982 Bennett Memo (Attachment at 1-2); *see also* 1983 Bennett Memo (Attachment at 2). Therefore, although excess emissions resulting from an unavoidable malfunction are considered violations, the enforcing authority may decide not to pursue penalties.

> and which can therefore be made to coincide with maintenance on production equipment, or other source shutdowns. Consequently, excess emission during periods of scheduled maintenance should be treated as a violation *unless* a source can demonstrate that such emissions could not have been avoided through better scheduling for maintenance or through better operation and maintenance practices.

Rasnic Memo at 2 (emphasis added); 1982 Bennett Memo (Attachment at 1); *see also* 1983 Bennett Memo (Attachment at 3). In other words, because routine startup and shutdown of process equipment are considered part of the normal operation of a source, these events are foreseeable and can be planned and scheduled at the discretion of the owner/operator. Excess emissions (i.e., air emissions that exceed any applicable emission limitation) that occur during these periods are therefore generally not excused and are considered illegal.[102] 1999 Herman Memo at 3. Apparently, EPA's rationale for considering all excess emissions as violations of applicable standards is that SIPs and PSD programs are ambient-based programs established to protect increments and the NAAQS. *See* Rasnic Memo (explaining that the same rationale for considering all excess emissions as violations under the State Implementation Plan applies in the PSD context). The Agency feared that "[w]ithout clear definition and limitations, * * * automatic exemption provisions could effectively shield excess emissions arising from poor operations and maintenance or design, thus precluding attainment." 1982 Bennett Memo at 1; Rasnic Memo at 2.

In this case, however, IEPA argues that it is not exempting Indeck from compliance with short-term BACT limits during SSM events. Presumptively, therefore, it has found a basis for providing non-numeric BACT limits in the SSM context. Nonetheless, IEPA has not adequately invoked infeasibility in the application of measurement methodologies – the only clear vehicle for non-numeric BACT limits – as required under section 52.21(b)(12). *See In re Brooklyn Navy Yard Res. Recovery Facility*, 3 E.A.D. 867, 878 (Adm'r 1992). Further, although IEPA asserts that the approach taken will more effectively control emissions than

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[102] Notably, the policy exempts excess emissions that occur during routine startups and shutdowns if the source can demonstrate that such emissions were actually caused by a sudden and unforeseeable breakdown in the equipment. 1982 Bennett Memo (Attachment at 2); Rasnic Memo at 2. In 1983, Kathleen Bennett clarified her 1982 Memo to include situations in which careful and prudent planning and design will not totally eliminate infrequent short periods of excess emissions during startup and shutdown. 1983 Bennett Memo. Accordingly, excess emissions during "infrequent short periods" of startup and shutdowns "need not be treated as violations provided the source adequately shows that the excess could not have been prevented through careful planning and design and that bypassing of control equipment was unavoidable to prevent loss of life, personal injury, or severe property damage." 1983 Bennett Memo at 3.

imposition of numeric limits,[103] there is no apparent record support for this conclusion. As explained in the foregoing discussion, the permitting authority must, in substituting numeric limits with work practices and the like, set forth, to the extent possible, the emission reductions expected from the implementation of this approach.[104] Also, the reductions should be equivalent to BACT,[105]and the permitting authority must provide a methodology for compliance. The record before us lacks a comparative analysis of the emission reductions expected from the approach IEPA adopted and the reductions expected from the application of numeric limits. IEPA's conclusory assertion that its approach better controls emissions during SSM events is not self-evident and lacks record support. Moreover, the permit only requires the permittee to minimize emissions.[106] In our view, this language is too infirm to comport with the relevant regulatory requirements, and nothing in it can reasonably be interpreted as requiring the permittee to employ measures that, at a minimum, will achieve a reduction in emissions equivalent to the level of reduction expected from the application of numeric limitations.[107]

Absent an on-the-record determination pointing to technical or economical limitations on the application of measurement methodology to Indeck's CFB Boilers sufficient to invoke section 52.21(b)(12), or some other reference point for allowing non-numeric BACT limits for design and operational SSM difficulties, we cannot conclude that IEPA legitimately substituted numeric limits with work and operational practices. Under these circumstances we conclude that the permit provisions substituting work and operational practices for BACT numeric limits must be remanded to IEPA. If, on remand, IEPA determines that emissions cannot be measured during SSM events, then IEPA needs to make an on-the-record determination to that effect and also determine that the work and operational practices are equivalent to BACT. If IEPA determines that Indeck's infeasibility is caused by other types of technical limitations, and intends to retain the provisions

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[103] *See* Responsiveness Summary at 11-12 (Response #25) ("The approach to these periods taken by the permit allows refinement to the required practices based on actual experience with the boilers over time, with the continuing objective of minimizing emissions during these periods of transitional operation. As such, this approach more effectively controls emissions than an alternative approach involving fixed limits set in the construction permit * * * .).

[104] If such reductions cannot be estimated, the record should, at least, explain why.

[105] Similarly, if such level of reduction is infeasible the record should at a minimum explain why.

[106] *See* Unit-Specific Condition 1.2(e) ("The permittee shall use reasonable practices *to minimize emissions* during startup, shutdown and malfunction of a boiler as further addressed in Condition 1.6.") (emphasis added); Unit-Specific Condition 1.6 ("The Permittee shall operate each boiler and associated air pollution control equipment in accordance with good air pollution control practices *to minimize emissions*.") (emphasis added).

[107] Indeed, neither the record nor the permit clearly show how BACT will be properly accounted for during SSM events.

that exempt short-term emissions from compliance with BACT, IEPA must demonstrate how the permit conditions comport with the applicable regulations, as interpreted by the EPA guidance discussed above,[108] show that short-term ambient standards are protected,[109] and demonstrate that the permit conditions are in compliance with NAAQS and PSD increments provisions.[110] Moreover, IEPA must specify and carefully circumscribe in the permit the conditions under which Indeck would be authorized to exceed these otherwise applicable emission limits.[111] IEPA argues that the provisions exempting short-term emissions only apply if a qualifying event occurs.[112] However, it is not clear from the permit what those qualifying events are. As currently drafted, the permit could arguably shield excess emissions arising from poor operation and maintenance or design.

For all the foregoing reasons we remand the permit to IEPA to provide further analysis of this issue and make any revision to the permit as may be appropriate. Specifically, we are remanding the permit conditions that exempt Indeck from complying with short-term emission limits during SSM events (i.e., Unit-Specific 1.2.b and Table I) and those provisions that in IEPA's view substitute BACT numeric limits with work practices and operational standards (i.e., Unit-Condition 1.2.e, Unit-Condition 1.6, and Source-Wide Condition 4.b).

F. *PM Emissions*

Petitioners argue that the particulate matter ("PM") emission limits incorporated into Indeck's PSD permit do not reflect BACT.[113] Amended Petition at 27. Petitioners first challenge the process by which Indeck selected (and IEPA ultimately included in the final permit) a 0.015 lbs/MBTU PM limit. In particular, Petitioners argue that the BACT analysis was deficient because Indeck failed to

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[108] The permit conditions as currently drafted – exempting Indeck from complying with short-term emissions during all SSM events – do not appear to be consistent with EPA guidance on this subject.

[109] The NSR Manual explains that "BACT emission limits or conditions must be met on a continual basis at all levels of operation * * * , demonstrate protection of short term ambient standards * * * and be enforceable as a practical matter." NSR Manual at B.56. The record before us only shows that annual limits will not be affected, however, we have not found the same analysis for short-term standards. *See* Application at 4-4 ("The results of this analysis show that startup operation does not increase potential annual emissions of any criteria pollutant.").

[110] *See, e.g.*, *Rockgen Energy Ctr.*, 8 E.A.D. 536, 550-54 (EAB 1999) (remanding in part because permit exempted excess emissions during SSM events; instructing permitting authority to show compliance with applicable requirements, including NAAQS and increment provisions); *In re Tallmadge Generating Station*, PSD Appeal No. 02-12, at 28 (EAB, May 21, 2003).

[111] *See Tallmadge* at 28 (May 21, 2003); *RockGen*, 8 E.A.D at 554.

[112] IEPA Response at 66.

[113] In this decision, we refer to PM/PM_{10} as "PM."

properly rank the recently-permitted power plants that use baghouses (the most effective type of control) to control PM emissions, or to provide a reasoned explanation for failing to require a more stringent emission limitation. As Petitioners observe, the top four performing baghouse-controlled units among the recently-permitted facilities that Indeck identified have PM limits of 0.0088, 0.010, 0.011, and 0.011, respectively. *Id.* at 28. As a result, Petitioners' conclude, "Indeck did not select, and IEPA did not compel, adoption of the best-performing PM emission rate, i.e., that achieved by the Northampton Generating Station in Pennsylvania."[114] *Id*.

It is well established that each PSD permit must contain emission limits that ensure, among other things, that the subject facility will achieve reductions in the applicable pollutants that reflect BACT. That is, the proposed plant must achieve reductions that reflect the use of the best available control technology, as determined by examining the emission controls that similar sources employ. In this case, the proposed Indeck facility must comply with a PM emission limit that corresponds with the performance of the best PM controls employed by similar emission sources (i.e., other CFB boilers), considering relevant site-specific factors. To the extent that Indeck rejects as BACT for its facility a more stringent PM emission limit in favor of a less stringent limit, it must explain why the more stringent limit is technically infeasible or otherwise inappropriate based on consideration of energy, environmental or cost impacts. *See Knauf I*, 8 E.A.D. at 130; NSR Manual at B.26-B.29.

Here, IEPA argues that the PM limit in Indeck's permit (0.015 lbs/MBTU) is appropriate in view of the limits established for other new coal-fired electric boilers. Responsiveness Summary at 8 (Comment #18); IEPA Response at 76. In support of this position IEPA cites its Response to Comment #18, in which IEPA identifies some recently permitted facilities with less stringent PM limits than the facilities Petitioners identify. *See* Responsiveness Summary at 8. IEPA character-

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[114] Petitioners also state that Indeck failed to "conduct[] an assessment of the energy, environmental and economic impacts of selecting a fabric filter versus [electrostatic precipitator], and whether there are any impacts associated with achieving the lower emission rates for the best-performing source." Amended Petition at 28. The Amended Petition, however, makes no effort to present a reasoned challenge to the selection of a fabric filter. Rather, it appears that this statement was intended to underscore IEPA's alleged failure to conduct an appropriate BACT analysis before establishing the permit's PM emissions limitation. Under the circumstances, Petitioners' argument on this issue fails to convince us that review is warranted. *See In re Amerada Hess Corp.*, 12 E.A.D. 1, 8 (EAB 2005) (explaining that the petitioner bears the burden of demonstrating that review is warranted); 40 C.F.R. § 124.19(a)(1)-(2). Morever, the Petition fails to demonstrate that this issue was raised during the comment period. *See* 40 C.F.R. § 124.19(a) (petition must include a demonstration that issues being raised were raised during the public comment period); *Amerada Hess Corp.*, 12 E.A.D. at 8 ("It is not incumbent upon the Board to scour the record to determine whether an issue was properly raised below.") (quoting *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 249 (EAB 1999)). Review is therefore denied on this issue.

izes Response #18 as expressing a "belief that the [PM] emission limit for BACT was consistent with BACT determinations for similar projects." Resp. Br. at 77. IEPA further argues that "[a]part from the mere existence of a lower emission rate * * * Petitioners fail to explain any rational basis or empirical support for their argument" that BACT for PM emission from Indeck's proposed facility should be more stringent. *Id*. at 78. IEPA observes that the Petitioners "do not discern between different boiler sizes, configurations, emissions control requirements," and that they specifically "do not clarify some of the more apparent differences * * * between the Northampton Generating Station and Indeck's proposed project." *Id.* (citing Resp't Ex. X, Table 5-1). According to IEPA, the basis for the permit's PM emissions limit in this case "is supported by facts that are facially evident from the Administrative Record." *Id*. at 79. We disagree.

As support for its determination, IEPA points to Indeck's evaluation of control technologies in its initial permit application as well as supplemental materials provided at IEPA's request. IEPA Response at 79 (citing Resp't Ex. X). In its application, Indeck represented that it had consulted the RACT/BACT/LAER Clearinghouse[115] ("RBLC") as well as other information sources in developing a list of PSD permit limits for all known CFB boiler projects permitted since 1995. *See* Indeck-Elwood Energy Center, PSD Construction Permit Application (Vol. I) (Aug. 2002) ("Indeck Application") at 5-3 and Table 5-1, Resp't Ex. X. This list reflects PM limitations ranging from 0.0088 lb/MBTU to 0.025 lb/MBTU. *Id.* at Table 5-1. Similarly, an updated list provided on October 25, 2002, reflects facilities with a range of PM emissions limits, some of which are more stringent than the limit at issue in this case. *See* Resp't Ex. FF (Attachment A). Examples of sources subject to more stringent PM emissions limits also appear in an assessment conducted by IEPA. *See* Resp't Ex. GG (Tables 21 & 22). The record, however, does not contain a sufficient explanation as to why IEPA rejected as BACT the more stringent PM emissions limitations.

Contrary to IEPA's protestations, the existence of a similar facility with a lower emissions limit creates an obligation for Indeck (and IEPA) to consider and document whether that same emission level can be achieved at Indeck's proposed facility. The NSR Manual explains the obligation this way:

> The EPA does not expect an applicant to necessarily accept an emission limit as BACT solely because it was re-

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[115] "RACT/BACT/LAER" stands for "Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate." Each of these acronyms refers to technology standards established by different sections of the CAA. BACT is the standard from the PSD provisions of the CAA. *See* CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4). The RACT/BACT/LAER Clearinghouse contains information on emissions controls and emissions limits for industrial facilities across the country. The Clearinghouse is organized by source category, thereby making it relatively easy to access emissions control information for a particular industrial enterprise.

> quired previously of a similar source type. While the most effective level of control must be considered in the BACT analysis, different levels of control for a given control alternative can be considered. For example, the consideration of a lower level of control for a given technology may be warranted in cases where past decisions involved different source types * * * [or where] other considerations show the need to evaluate the control alternative at a lower level of effectiveness.

NSR Manual at B.23-B.24. The manual states further that:

> After identifying and listing the available control options the next step is the determination of the energy, environmental, and economic impacts of each option and the selection of the final level of control. The applicant is responsible for presenting an evaluation of each impact along with appropriate supporting information. Consequently, both beneficial and adverse impacts should be discussed and, where possible, quantified.

Id. at B. 26. Thus, to the extent that a permit applicant selects an emission limit that does not reflect the most stringent limit among recently permitted similar facilities, the burden, in the first instance, is on the permittee to explain why the more stringent limits were rejected.[116] *Knauf I*, 8 E.A.D. at 131-32. As the Board

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[116] Once the the permitting authority identifies an explanation in the record for the permitting decision, only then does the burden shift to the party challenging the petition to demonstrate that the decision was clearly erroneous. *See In re Newmont Nev. Energy Inv., L.L.C.*, 12 E.A.D. 429, 458-59 (EAB 2005) ("[W]here an alternative control option has been evaluated and rejected, those favoring the option must show that the evidence 'for' the control option clearly outweighs the evidence 'against its application.'") (quoting *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 194 (EAB 2000)). As the Board has previously stated:

> [I]t is important to distinguish between BACT decisions where the permit issuer failed to consider an "available" control option in the first instance and decisions where the option was considered but rejected. Where a more stringent alternative is not evaluated because the permitting authority erred in not identifying it as an "available" option, a remand is usually appropriate, because proper BACT analysis requires consideration of all potentially "available" control technologies. However, where an alternative control option has been evaluated and rejected, those favoring the options must show that the evidence "for" the control option clearly outweighs the evidence "against" its application.

In re Inter-Power of N.Y., Inc., 5 E.A.D. 130, 144 (EAB 1994); *accord In re Cardinal FG Co.*, 12 E.A.D. 153, 167 (EAB 2005).

has previously explained, the BACT analysis is one of the most critical elements of the PSD permitting process and, as such, it should be well documented in the administrative record. *Id*. at 130-31. The decision to eliminate a particular control option must be adequately explained and justified in the administrative record. *See In re Newmont Nev. Energy Inv., L.L.C.*, 12 E.A.D. 429, 443 (EAB 2005) (holding that while rejection of more stringent limitations is not a per se violation of the BACT requirements, the permit issuer must provide an appropriate rationale in light of the evidence in the record). The failure to provide an adequate justification may result in a remand to the permitting authority. *See Knauf I*, 8 E.A.D. at 131*; see also In re Gen. Motors, Inc.*, 10 E.A.D. 360, 374 (EAB 2002) (remanding permit where BACT determination lacked adequate support in the record); *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 224-25 (EAB 2000) (remanding BACT limitation where permit issuer failed to provide adequate explanation for why limits deviated from those of other facilities); *In re Masonite Corp*., 5 E.A.D. 551, 566 (EAB 1994) (remanding PSD permit decision in part because BACT for one emission source was based on an incomplete cost-effectiveness analysis); *In re Pennsauken County N.J., Res. Recovery Facility*, 2 E.A.D. 667, 62 (Adm'r 1988) (remanding PSD permit decision because "[t]he applicant's BACT analysis * * * does not contain the level of detail and analysis necessary to satisfy the applicant's burden" of showing that a particular control technology is technically or economically unachievable).

In the present case, there is no indication in the record or in IEPA's brief that either Indeck or IEPA expressly considered a more stringent PM standard than the one specified in Indeck's PSD permit. Rather, it seems that Indeck identified the less stringent 0.015 lbs/MBTU PM limit as BACT for the proposed plant without a sufficient analysis in the record of why it was rejecting the other possible PM limits.[117] While IEPA goes to great lengths to point out the existence of other facilities with a comparable PM emissions limit, this, without more, is insufficient to justify the rejection of more stringent limits. IEPA states that the administrative record shows that the PM performance level adopted in Indeck's permit appropriately reflects considered judgment and is "rational in light of all the information in the record, including the conflicting opinions." IEPA Response at 78.

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[117] Nor does IEPA's brief shed any light on this question. The only relevant citation to the record in IEPA's brief discussing the rationale for rejection of a more stringent PM emissions limitation is a reference to a conclusory response in the Responsiveness Summary, which reads:

> The comment does not show that the BACT determination for PM for the proposed boiler is deficient. The BACT limit is consistent with limits set for other new coal-fired utility boilers, including those at the proposed Thoroughbred Generating Station in Kentucky and proposed Boiler 4 at the Council Bluffs Energy Center in Iowa. The emission set for PM, 0.015 lb/[MBTU], is appropriate.

Responsiveness Summary at 8.

IEPA states further that "the basis for the selection of the performance rate is supported by facts that are facially evident from the Administrative Record." *Id*. at 79. However, nowhere does IEPA point to any part of the administrative record containing a sufficient explanation of why these PM limits, and not the more stringent PM limits cited by the Petitioners and listed in the permit application, form the basis of the BACT determination in this case.[118] *See In re BP Cherry Point*, 12 E.A.D. 209, 230-33 (EAB 2005) (articulating the kind of "detailed discussion" necessary to demonstrate that adoption of a more stringent permit limitation is inappropriate based on source-specific considerations).[119]

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[118] We note that footnote 62 in IEPA Response provides only speculation about the kinds of difference that *might* exist between the facilities that Petitioners reference with more stringent PM emission limitations and the proposed facility in this case. IEPA Response at 78 n.62.

[119] The PSD permit at issue in *BP Cherry Point* included an NO_x limitation of 2.5 parts per million ("ppm") even though some recently permitted facilities had adopted a more stringent limit of 2.0 ppm. *BP Cherry Point*, 12 E.A.D. 209, 232. In support of the permit issuer's conclusion that the more stringent limitation was inappropriate, the record contained the following discussion:

> Although the BP Cogeneration Project's CTs [combustion turbines] and DBs [duct burners] are similar to the [other] emission units listed [in the record] * * * the [Facility's] CTs and DBs will experience operating conditions not seen at the[se] facilities * * * . Like other combined cycle cogeneration projects, the [Facility] will supply electricity to the grid and steam to customers. The fact that the [Facility's] customer is the BP Cherry Point Refinery is significant.
>
> The BP Cherry Point Refinery is a complex petroleum refinery with several process units and the third largest refining capacity (225,000 barrel-per-day) on the West Coast. Refinery steam demand variability is caused by the following: (1) process adjustment, process control, crude and product changes; (2) startup and stopping turbines; (3) batch cycle coker operation; (4) calciner shutdown; and (5) flare control. The levers for refinery steam header pressure control include: (1) CT load; (2) high pressure steam bypass to refinery process units (bypass steam turbine); (3) DB firing; (4) refinery boilers; and (5) combinations of the above. The goal is to maintain a constant (changes no greater than 1-2 psi per minute) refinery steam header pressure even through wide swings in steam flow.
>
> The [Facility's] CTs and DBs will be fired under variable load conditions to adjust for continuous swings in steam demand across multiple process units at the BP Cherry Point Refinery. Variable DB and CT firing rates will generate greater NO_x emissions (exit gas NO_x concentrations) and therefore limit the [Facility's] ability to reduce emissions below 2 ppm NO_x. Stand-alone combined cycle power generation plants and cogeneration facilities with more predictable and steady state steam loads simply enjoy more favorable operating conditions to control NO_x emissions below 2 ppm.

Id. at 232-33. This analysis stands in contrast to IEPA's summary rationale for rejecting more stringent PM limitations in the present case.

Because the record before us does not contain a sufficient explanation for IEPA's decision regarding Indeck's PM limit, the permit is remanded to IEPA for further explanation and analysis, and for adjustment of the PM limit, if necessary, to appropriately reflect BACT.[120]

Petitioners also contend that the permit's PM limitation does not represent BACT because the permit fails to include a BACT limitation for condensible particulate matter ("CPM"). Upon review, the Board has decided to remand this issue to IEPA as well for further consideration. In response to Petitioner's assertion on this issue, IEPA stated, in part, that limited information exists upon which to base a limit applicable to CPM. IEPA Response at 86-87; Responsiveness Summary at 8-9. However, given that approximately three years have passed since the original BACT analysis, the Board is including this issue in its remand.[121] On remand, IEPA is instructed to reconsider whether a PM limitation including a limitation stated as CPM is appropriate, and if so, to modify the permit accordingly.[122]

G. *BACT Limit for NO_x*

The next challenge Petitioners raise is to Unit Specific Conditions 1.2.b.iii and 1.15.e. Condition 1.2.b.iii establishes NO_xlimitations for each of the CFB boilers. According to this provision, NO_x emissions from each boiler shall not exceed "0.10 lb/[MBTU], or such lower limit as set by the Illinois EPA following the Permittee's evaluation of NO_x emissions and the SNCR system in accordance with Condition 1.15." Permit at 12 (Unit Specific Condition 1.2.b.iii). This provision further provides that "the demonstration period for the boiler shall be the first two years of operation." *Id*. Condition 1.15 provides the criteria for the optimiza-

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[120] The Board is not concluding that the permit's PM limitation of 0.015 lb/MBTU does not represent BACT. Rather, we hold only that the record before us is insufficient for the Board to make an informed determination in this regard. This is in contrast to the record in the Board's recent decision in *In re Prairie State Generating Co.*, 13 E.A.D. 1 (EAB 2006). In that case, the petitioners asserted that IEPA's response to comments relating to the selection of an identical PM limitation were clearly erroneous. Upon review, however, the Board found that IEPA had provided detailed responses to comments on this issue and that petitioners had failed to show clear error. *See id.* at 102-104. In the present case, however, we conclude that IEPA has failed to sufficiently articulate a justification for its determination.

[121] We note that in a permit IEPA recently issued to another facility (Prairie State), the permit sets two limits for particulate matter, one stated as filterable PM and another stated as filterable and condensable PM_{10}. *Prairie State*, 13 E.A.D. 1 (EAB 2006).

[122] The Board makes no determination on whether such a permit change is appropriate in this case. We note, however, that the Agency has previously expressed the position that it is important to account for CPM "where condensibles constitute a significant fraction of the total PM_{10} because otherwise, the PM_{10} impact will be underestimated." *AES Puerto Rico L.P.*, 8 E.A.D. 324, 348 (EAB 1999) (citing Letter from Thompson G. Pace, U.S. EPA, to Sean Fitzsimmons, Iowa Department of Natural Resources (Mar. 31, 1994)), *aff'd sub nom. Sur Contra La Contaminación v. EPA*, 202 F.3d 443 (1st Cir. 2000).

tion of NO_x emissions. Specifically, this provision requires the Permittee to "evaluate NO_x emissions from boilers to determine whether a lower NO_x emission limit (as low as 0.08 lb/[MBTU]) may be reliably achieved while complying with other emission limits and without significant risk to equipment and personnel." Permit at 24 (Unit-Specific Condition 1.15.a.i). This condition requires that the Permittee prepare a plan for the evaluation of NO_x emissions. The plan should be submitted to IEPA, for its review and comments, no later than 90 days after the initial startup of each boiler. *Id.* (Unit-Specific Condition 1.15.b). This condition reiterates the two-year deadline for the completion of the evaluation, and, under certain circumstances allows for a one-year extension. *Id.* at 25 (Unit-Specific Conditions 1.15.e.i, .ii).

Petitioners argue that these provisions are illegal because they effectively defer Indeck's BACT determination until seven years after the PSD permit is issued, as opposed to determining BACT prior to permit issuance.[123] *See* Amended Petition at 33. Petitioners further argue that the 0.10 lbs/MBTU NO_x limit incorporated into Indeck's PSD permit does not reflect BACT because the equipment vendor that Indeck intends to use has previously guaranteed emissions performance of 0.09 lbs/MBTU. *Id.* at 33-34 (observing that the State of Florida established an NO_x limit of 0.09 lbs/MBTU for a CFB power plant based on a guarantee by the same vendor Indeck intends to use).

From the record on appeal, however, it does not appear that the issues described above were raised at any point during the development of the permit.[124] We reiterate that in order to preserve an issue for appeal, a party must raise that issue with reasonable specificity during the public participation process,[125] and the burden of demonstrating that an issue has been a preserved for appeal rest with

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[123] Indeck estimates that the facility will be completed by 2007. Petitioners argue that if one adds the three years allowed under permit Condition 1.15 to the estimated completion date, no BACT determination will be made until 2010. Amended Petition at 33.

[124] Notably, IEPA makes this observation in its Response, and Petitioners fail entirely to address it in their reply brief. *See* IEPA Response at 92-93; Pet'rs Reply at 22-23.

[125] IEPA acknowledges that a general comment pertaining to the BACT limit for NO_x was raised during the comment period. *See* IEPA Response at 92. The comment, however, was distinct from the arguments raised on appeal. During comments below concerns were raised about the stringency of the NO_x limit when compared with BACT limits for gas-fired facilities. No concerns regarding the deadlines in permit Condition 1.15, or the vendors's representations, were raised at that time. *See* Responsiveness Summary at 9 (Comment #20) ("The determination of BACT for the proposed boiler for NO_x is deficient because the emission limit is not stringent enough. When applied to gas-fired facilities, selective catalytic reduction or SCR can achieve a NO_x emission rate of 0.008 lb/[MBTU]. The performance of the selective non-catalytic reduction system or SNCR for the proposed boiler can be enhanced by its design, e.g., increased residence time and better temperature control. Considering cost and equipment degradation over time the BACT limit for NO_x for the proposed boiler should be set at 0.024 lb/[MBTU], rather than 0.10 lb/[MBTU]."). The issues raised on appeal were therefore not preserved for Board review.

the petitioner. *See* 40 C.F.R. §§ 124.13, 124.19(a); *In re BP Cherry Point*, 12 E.A.D. 209, 217 (EAB 2005); *In re Amerada Hess Corp. Port Reading Refinery*, 12 E.A.D. 1, 8 (EAB 2005); *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 249-20 n.10 (EAB 1999). Since Petitioners in this case failed to show that the issues above were raised during the public comment period on the underlying permit, we deny review of this issue.[126]

H. *Fluoride Emissions*

Petitioners' next argument is that IEPA failed to conduct a BACT determination for flourides and set a flouride emission limit, despite flouride being a PSD-regulated pollutant. Amended Petition at 34. Indeed, this concern was raised during the public comment period and IEPA responded to this concern by observing that emissions at the new facility are subject to Maximum Achievable Control Technology ("MACT") emission limits for hydrogen chloride, and BACT limits for SO_2 and PM. Responsiveness Summary at 8 (Response #17). IEPA explained that the emission limits for hydrogen chloride, SO_2, and PM will assure adequate removal of fluorides. *Id*. According to IEPA, because hydrogen fluoride emissions behave very much like hydrogen chloride, and because hydrogen fluoride and hydrogen chloride are reduced using the same types of control measures, the MACT emission limit for hydrogen chloride functions as a reasonable control of fluoride emissions. *Id*. Specifically, IEPA articulated its response as follows:

> BACT for fluorides is being established by the limits on SO_2 and particulate matter emissions and by the Maximum Achievable Control Technology or MACT limit for hydrogen chloride required by section 112(g) of the Clean Air Act. In particular, the fluoride of greatest concern, hydrogen fluoride, is chemically similar to hydrogen chloride and effective control of hydrogen chloride also assures effective control of hydrogen fluoride. Accordingly, it is not necessary to set a separate BACT limit for total flourides.

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[126] We note also that the Board has previously addressed whether a BACT standard may incorporate an NO_x limit that ratchets downward based on assessments that take place after permit issuance, and concluded that such "optimization clauses" are not *per se* impermissible. *See In re Hadson Power14-Buena Vista*, 4 E.A.D. 258, 291 (EAB 1992); *In re Pennsauken County N.J. Resource Recovery Facility*, 2 E.A.D. 768, 771 (Adm'r 1989); *see also*, *In re RockGen Energy Ctr*., 8 E.A.D. 536, 554 (EAB 1999). Furthermore, nothing in the Petitioners' discussion of Indeck's NO_x limit explains why, as a technical matter, such a provision is inappropriate in this case. *See* Amended Petition at 32-34.

Id. On appeal, IEPA argues that the Board should deny review of this issue because Petitioners failed to show that IEPA's response to comment is erroneous. IEPA Response at 96.

We agree with IEPA. Petitioners have failed to satisfy one of the requirements for obtaining review under 40 C.F.R. § 124.19. It is well established that to obtain review under 40 C.F.R. § 124.19, petitioners must not only state their objections to a permit but must also explain why the permitting authority's response to those objections (for example, in a response to comments document) is clearly erroneous or otherwise warrants review. *In re Knauf I*, 8 E.A.D. at 127; *see also In re Peabody Western Coal Co.*, 12 E.A.D. 22, 33 (EAB 2005); *In re Zion Energy, LLC*, 9 E.A.D. 701, 705 (EAB 2001). In order to carry this burden the petitioner must address the permit issuer's responses to relevant comments made during the process of permit development; the petitioner may not simply reiterate comments made during the public comment period, but must substantively confront the permit issuer's subsequent explanations. *Peabody*, 12 E.A.D. at 33; *see also In re Knauf II*, 9 E.A.D. at 5 ("Petitions for review may not simply repeat objections made during the comment period; instead they must demonstrate why the permitting authority's response to those objections warrants review."); *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997); *In re P.R. Elec. Power Auth.*, 6 E.A.D. 253, 255 (EAB 1995). In the instant case, the Petition merely reiterates comments previously submitted to IEPA during the public comment period without indicating why IEPA's responses to these comments were clearly erroneous. Petitioners' failure to do more than reiterate earlier objections without ever addressing IEPA's response is fatal to their appeal of this issue. Therefore, we deny review of this issue.[127]

I. *Consideration of Alternative Sites*

Petitioners argue that IEPA's issuance of Indeck's PSD permit was improper because IEPA did not evaluate alternative sites for the proposed facility (or require Indeck to do so). Amended Petition at 35. In its comments on this issue during the comment period, Petitioners and others commented on Indeck's alleged failure to adequately consider alternative locations to the proposed facility. *See, e.g.*, Letter From Bruce Niles, Sierra Club, and Brian Urbaszewski, American Lung Association of Metropolitan Chicago, to Daniel Merriman, Hearing Officer, IEPA (June 26, 2003) ("Petitioners' Comments") (Pet'rs Ex. D) at 12; Responsiveness Summary at 37-42. In particular, Petitioners stated, in part:

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[127] Because Petitioners failed to meet a threshold requirement for obtaining review, we need not determine whether IEPA's decision to not include a separate BACT limit for total flourides is clearly erroneous.

> The most obvious alternative sites to build a power plant would be at a location that would not adversely impact the Midewin and Lincoln Cemetery, and at a location that is not immediately downwind of millions of residents already breathing polluted air. IEPA has determined the VOC[s] are the primary smog-causing culprit (at least for the one-hour ozone standard), and that VOC[s] are typically unstable compounds and cause smog within less than thirty miles of the source. In this instance, Indeck is a major source of VOC pollution, so a reasonable alternative site would be sufficiently distant outside of the nonattainment area to allow natural destruction of the VOC emissions.
>
> Furthermore, Indeck's NOx and SO2 emissions would contribute to the PM2.5 problems already plaguing the Chicago region. It is reasonable for Indeck to consider a site that is sufficiently distant or otherwise situated to avoid adding to the region's PM2.5 problem.

Petitioners' Comments at 12-13. In its Responsiveness Summary IEPA responded at length to these comments. IEPA stated, in part:

> This comment reflects an incorrect understanding of the manner in which power plants in general and this plant in particular would contribute to ozone formation. Power plants contribute to ambient ozone over long distances downwind, with the effects primarily attributable to their NOx emissions, not [volatile organic material] emissions. This is a consequence of two phenomena. First, power plants have tall stacks so emissions do not immediately begin to participate in the formation of ground level ozone. In this regard, the [volatile organic material] emissions of power plants, on a pound per pound basis, have a much smaller contribution to ambient ozone than the [volatile organic material] emissions emitted from ground level sources. Second, the initial effect of the NOx emissions from a power plant, like NOx emissions from other combustion sources, is to destroy ozone as the NOx, most of which is emitted as NO, is oxidized to NO_2. It is only after the conversion to NO_2 occurs that the NOx begins to participate in reactions contributing to the formation of ozone. Accordingly, the effect of the proposed plant, which would be in the Chicago area, on ambient ozone, would normally be expected to be outside or beyond the

> Chicago area. If the plant were located further south, outside the ozone nonattainment area, the plant would be expected to have similar if not greater impact on ozone in the Chicago area. These effects are demonstrated by the assessment performed by the [IEPA] of the effects of new power plants on ozone air quality, which conservatively assumes that all existing plants continue to operate. This evaluation shows that emissions from this plant and other proposed power plants would not cause violations of the 1-hour ozone air quality standard. They also would not jeopardize timely attainment of the standard.
>
> Similarly, as PM2.5 is formed in the atmosphere from SO_2 and NOx emissions, locating the plant further south, outside the ozone nonattainment area, would not necessarily have a significant effect on its contribution to PM2.5 in the Chicago area. More importantly, reductions in PM2.5 levels in the Chicago area require regional reductions in the emissions of PM2.5 precursors from all major existing sources given the measured high background levels of PM2.5.

Responsiveness Summary at 38-39 (Response to Comment #109).

Further, in response to a comment suggesting that IEPA failed in its obligations to allow for sufficient public input on site selection or to adequately consider other reasonable sites, IEPA stated:

> The relevant provision of the Clean Air Act (Section 165(a)(2)) specifically requires that a public hearing be held "with opportunity for interested persons be able [sic] 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." This statutory PSD requirement concerns the scope of the public hearing and was satisfied by the public hearing and comment period held by the [IEPA]. Information on the existing air quality at the site of the proposed plant, as is relevant to the permit, was made available by the [IEPA]. Beyond this, there is no legal requirement that a draft PSD permit must address alternatives to a proposed project, as suggested by this comment, nor would it be appropriate for the permit to address an alternative project that was not actually the subject of the permit.

Id. at 42 (Response to Comment #121).

Here again, Petitioners' arguments are little more than a restatement of their earlier comments and fail to demonstrate why the IEPA's responses to comments in this regard were clearly erroneous or otherwise warrant review. Accordingly, review is denied on this issue. *See In re Cardinal FG Co.*, 12 E.A.D. 153, 160 (EAB 2005) (explaining that in order to establish that review is warranted, petitioners must explain why the permit issuer's previous responses were clearly erroneous or otherwise warrant review); *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 744 (EAB 2001).[128]

J. *ESA Challenges*

Petitioners also raise several ESA challenges to the final permit. These issues are, to a significant extent, intertwined with Petitioners' claims regarding the soils and vegetation analysis, which we have already addressed. *See supra* Part II. B. Even though we are remanding the permit because we have found that IEPA erred in its soil and vegetation analysis, we still consider Petitioners' ESA arguments to the extent that they raise issues separate and distinct from those raised in connection with the soils and vegetation analysis.

In considering the ESA issues, we first summarize the statutory and regulatory provisions relevant to Petitioners' claims. We then describe the development of the ESA issues in this case, which have evolved during the pendency of this appeal because of the unusual procedural history of these claims. Finally, we analyze the substantive questions raised by Petitioners' claims.

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[128] Moreover, even if Petitioners had satisfied the requirements for Board review on this issue, the record before us indicates that both Indeck and IEPA adequately addressed and documented their respective consideration of alternatives to the proposed facility and that petitioners had an adequate opportunity to comment on this issue. *See* Resp't Ex. CC (Alternative Siting Issues Raised During Public Review for the Permit to Construct, prepared by Indeck-Elwood, LLC (Aug. 14, 2003) & MM (Memorandum to File from Christopher Romaine, Re: Review of Analysis of Alternatives, Indeck-Elwood (Oct. 10, 1003)); Responsiveness Summary at 37-42. There is simply no indication in the record that IEPA's determinations in this regard were clearly erroneous or otherwise warrant Board review. *See In re Sutter Power Plant*, 8 E.A.D. 680, 689 (EAB 1999) (rejecting petitioner's argument that EPA's review of alternative sites was inadequate because petitioner did "not identify any error in the Region's decision not to reconsider the siting decision in the context of issuing a PSD permit"); *see also In re Tondu Energy Co.*, 9 E.A.D. at 717 (EAB 2001) (holding that the petitioner's assertions regarding the inappropriateness of the proposed facility location failed to "identify specific permit conditions that she is challenging as erroneous and whose revision or removal could redress her concerns").

1. *Relevant ESA Statutory Provisions andImplementing Regulations*

The ESA, 16 U.S.C. §§ 1531-1544, was enacted in 1973 in response to increasing concerns about the impacts of human activities on fish, wildlife, and plants and their natural habitats. Endangered Species Act of 1973, Pub. L. 93-205, 81 Stat. 884 (1973) (codified at 16 U.S.C. §§ 1531-1544). Of particular concern were those species that had been rendered extinct or whose numbers were so depleted as to be in danger of or threatened with extinction. ESA § 2(a)(1)-(2), 16 U.S.C. § 1531(a)(1)-(2). Thus, one of the ESA's primary purposes is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species." ESA § 2(b), 16 U.S.C. § 1531(b). In order to accomplish this goal, the ESA contains provisions for the "listing" of endangered or threatened species and the designation of critical habitat for those species by the Secretary of the Interior and the Secretary of Commerce.[129] *See* ESA § 4, 16 U.S.C. § 1533; *see also* Interagency Cooperation – Endangered Species Act of 1973, as Amended, 51 Fed. Reg. 19,926, 19,928 (June 3, 1986) (codified at 50 C.F.R. pt. 402) [hereinafter "ESA Consultation Regulations"] (noting that the two agencies share duties under the ESA). In addition, the ESA imposes a number of specific substantive and procedural obligations on the activities of federal agencies, including EPA. *See, e.g.*, ESA §§ 7(a)(1), (a)(2), 9(a)(1), (a)(2), 16 U.S.C. §§ 1536(a)(1), (a)(2), 1538(a)(1), (a)(2); *see also* 50 C.F.R. § 402.06(a) (noting both procedural and substantive requirements under the ESA).

Of particular relevance to this case is section 7(a)(2), which contains important substantive and procedural requirements. *See Sierra Club. v. Babbitt*, 65 F.3d 1502, 1504-05 (9th Cir. 1995). This section requires that:

> Each Federal agency shall, in consultation with and with the assistance of the [FWS], insure that any action authorized, funded, or carried out by such agency * * * is not

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[129] For the most part, the two "Secretaries" share responsibilities under the ESA, and the term "Secretary" is used throughout the Act to denote either one Secretary or the other. ESA § 3(15); 16 U.S.C. § 1532(15); 50 C.F.R. § 402.01(b); ESA Consultation Regulations, 51 Fed. Reg. 19,926, 19,926 (June 3, 1986). Generally, the Secretary of the Interior acts through the U.S. Fish and Wildlife Service ("FWS") to implement the requirements of this section of the ESA with respect to terrestrial species, whereas responsibilities for marine species are vested in the Secretary of Commerce and have been delegated to the National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS"). 50 C.F.R. § 402.01(b); 51 Fed. Reg. at 19,926. In some limited cases, such as sea turtle species that live on land and in the sea, jurisdiction may be shared by the two "Services." 50 C.F.R. §§ 17.2 (b), 222.309(a); *see also Hawksbill Sea Turtle v. FEMA*, 126 F.3d 461, 470 (3d Cir. 1997) (finding that the two agencies share jurisdiction over sea turtles). Because the species at issue in this case are terrestrial, this opinion will primarily use the term "FWS" (or "Service") from this point onward when referring to duties and responsibilities of the "Secretaries" or the "Services."

> likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the [FWS] * * * to be critical, unless such agency has been granted an exemption for such action * * * .

ESA § 7(a)(2), 16 U.S.C. § 1536(a)(2). Notably, agency "action" has been broadly defined by regulation to include "the granting of licenses, contracts, leases, easements, rights-of-way, [or] *permits*." 50 C.F.R. § 402.02; *see also In re Dos Republicas Resources Co.*, 6 E.A.D. 643, 649 (EAB 1996) (noting that "[c]overed ESA Federal actions include the granting of a permit"); *Envtl. Prot. Info. Ctr. ("EPIC") v. Simpson Timber Co.*, 255 F.3d 1073, 1075 (9th Cir. 2001) (same). Section 7(a)(2), therefore, imposes a substantive duty on federal agencies to ensure that none of their actions, including the issuance of a permit,[130] is likely to jeopardize listed species or destroy or adversely modify such species' critical habitat.[131] *See* 51 Fed. Reg. at 19,926; *see also In re Phelps Dodge Corp.*, 10 E.A.D. 460, 485 (EAB 2002); *Dos Republicas*, 6 E.A.D. at 649, 666.

As a key means of ensuring fulfillment of this substantive objective, ESA section 7(a)(2) also imposes a procedural duty on federal agencies – to consult with the FWS[132] – and this consultation obligation applies to any agency action "in

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[130] As discussed more fully below, in the most recent brief filed by EPA's Office of General Counsel on this issue, OGC, on behalf of the Office of Air and Radiation (OAR), states that "EPA interprets issuance of a federal PSD permit to qualify as [an] action" under the ESA. *See* OAR Post-Consultation Br. at 5.

[131] The ESA defines "critical habitat" as:

> (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of [the ESA], on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and
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> (ii) specific areas outside the geographic area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of [the ESA], upon a determination by the Secretary that such areas are essential for the conservation of the species.

ESA § 3(5)(A), 16 U.S.C. § 1532(5)(A).

[132] Consultation may take one of the following forms: (1) early consultation, 40 C.F.R. § 402.11; (2) biological assessment, *id*. § 402.12; (3) informal consultation, *id.* § 402.13; or (4) formal consultation, *id.* § 402.14. The consultation procedures are intended to give the FWS the opportunity to determine whether the federal action is likely to jeopardize protected species or adversely impact critical habitat. ESA § 7(b)(3)(A); 16 U.S.C. § 1536(b)(3)(A). If such impacts are likely, the consulta-
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which there is discretionary Federal involvement or control." 50 C.F.R. § 402.03; *see Sierra Club v. Babbitt*, 65 F.3d 1502, 1509 (9th Cir. 1995) (discussing whether the Bureau of Land Management had retained any discretion to influence action when it had previously granted a right-of-way to a private entity). According to the regulations implementing this provision of the ESA, consultation with the FWS is required when an agency determines that its action "'may affect' listed species or critical habitat." 50 C.F.R. § 402.14(a);[133] *Phelps Dodge*, 10 E.A.D. at 485-86; *see also EPIC*, 255 F.3d at 1075. The term "may affect" is broadly construed by FWS to include "[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character," and thus is easily triggered. 51 Fed. Reg. at 19,926. If an agency determines that its action meets this low threshold and "may affect" a listed species or adversely modify its critical habitat, formal consultation with the FWS is required, with limited exceptions.[134] 50 C.F.R. § 402.14(a), (b). One such exception relevant to this case is where the agency

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tion process allows for identification of reasonable and prudent alternatives to avoid such unfavorable impacts. *Id.*; 50 C.F.R. § 402.14(g)(5).

[133] Section 402.14 of 50 C.F.R. provides as follows:

> (a) Requirement for formal consultation. Each Federal agency shall review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If such a determination is made, formal consultation is required, except as noted in paragraph (b) of this section. The Director may request a Federal agency to enter into consultation if he identifies any action of that agency that may affect listed species or critical habitat and for which there has been no consultation. When such a request is made, the Director shall forward to the Federal agency a written explanation of the basis for the request.
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> (b) Exceptions. (1) A Federal agency need not initiate formal consultation if, as a result of the preparation of a biological assessment under § 402.12 or as a result of informal consultation with the Service under § 402.13, the Federal agency determines, with the written concurrence of the Director, that the proposed action is not likely to adversely affect any listed species or critical habitat.
>
> (2) A Federal agency need not initiate formal consultation if a preliminary biological opinion, issued after early consultation under § 402.11, is confirmed as the final biological opinion.

50 C.F.R. § 402.14.

[134] If an agency determines there will be *no* effect on any federally-listed species or critical habitat (for example, where the agency determines there are no listed species or critical habitat in the proposed "action area"), the agency need not formally consult. *See* 50 C.F.R. § 402.14(a); *see also Phelps Dodge*, 10 E.A.D. at 486. Of course, an agency's "no effect" determination should be supportable under the ESA.

successfully completes an "informal consultation" with the Service.[135] *Id*. §§ 402.13(a),[136] 402.14(b)(1). In particular, the regulations provide that "[i]f during *informal consultation* it is determined by the Federal agency, with the written concurrence of the Service, that the action *is not likely to adversely affect listed species or critical habitat*, the consultation process is terminated, and no further action [i.e., no formal consultation] is necessary." *Id*. § 402.13(a) (emphasis added). An informal consultation generally consists of "discussions, correspondence, etc., between the Service and the Federal agency or the designated non-Federal representative, designed to assist the Federal agency in determining whether formal consultation or a conference is required." *Id*.

Significantly, according to the implementing regulations, agencies are to review their actions "at the earliest possible time" to determine whether the low "may affect" threshold is met and thus whether the agency needs to initiate some type of consultation. *Id*. § 402.14(a). Once consultation has been initiated, an involved agency is to refrain from "any irreversible or irretrievable commitment of resources" that would serve to foreclose the implementation of protective measures that might flow out of the consultation process. ESA § 7(d), 16 U.S.C. § 1536(d).

2. *Procedural History of Petitioners' ESA Claims*

As we mentioned above, *see supra* Part I.C., Petitioners first raised ESA concerns on appeal in their Amended Petition. At that time, Petitioners challenged Region 5's failure "to consult with the Fish and Wildlife Service and ensure that two plant species are protected" – in particular, the eastern prairie fringed orchid (*Plantanthera leucophaea*) and the leafy prairie clover (*Dalea foliosa*) – prior to the issuance of Indeck's permit. Amended Petition at 7; *see also id.* at 36 (arguing

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[135] *See supra* note 133.

[136] Section 402.13 provides:

> (a) Informal consultation is an optional process that includes all discussions, correspondence, etc., between the Service and the Federal agency or the designated non-Federal representative, designed to assist the Federal agency in determining whether formal consultation or a conference is required. If during informal consultation it is determined by the Federal agency, with the written concurrence of the Service, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary.
>
> (b) During informal consultation, the Service may suggest modifications to the action that the Federal agency and any applicant could implement to avoid the likelihood of adverse effects to listed species or critical habitat.

50 C.F.R. § 402.13.

that, despite the fact that the FWS "determined that granting Indeck's PSD permit is a federal action that 'may affect' two endangered species," Region 5 declined to consult with the FWS, a decision that was unlawful and clearly erroneous). Petitioners stated that Region 5 had apparently declined to consult because it had determined that "EPA lacks discretionary authority." *Id*. at 38 (quoting *id*., Ex. P (Letter from Cheryl Newton, Acting Air & Radiation Director, Region 5, U.S. EPA, to John Rogner, Field Supervisor, FWS (Oct. 10, 2003))). Petitioners did not raise any other ESA-specific concerns in their Amended Petition.[137] *See id*. at 7, 36-47. In granting Petitioners leave to file their amended petition, we concluded that we had the authority to consider a challenge to the permit based upon Petitioners' failure to consult even though the PSD regulations do not explicitly reference ESA procedures.[138]

Several months after this issue was raised, Region 5 initiated,[139] and later completed, an ESA consultation with FWS in the form of an "informal consulta-

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[137] Petitioners briefly referred to ESA section 7(d) in passing. *See* Amended Petition at 39. They did not, however, make any specific arguments as to that ESA provision and its applicability to Indeck's permit. *See id.*

[138] As noted in the text above, we addressed this issue at length in an earlier order. *See* Order (1) Granting Motion for Leave to File Amended Petition and (2) Requesting Region 5 and/or OGC to File a Response at 7-9 & nn.6-7 (Feb. 3, 2004). There we stated that:

> [W]e read Petitioners' new issue as raising a challenge to the validity of the entire permit, rather than raising a legal issue disassociated from the PSD regulations and the permitting responsibilities of the U.S. Environmental Protection Agency. * * * As we have indicated in the past, sections 124.19(a) and 124.15(a) of 40 C.F.R. authorize the Board to review "any condition" of a permit decision, which term we have construed to include challenges to the permit decision in its entirety. *See* 40 C.F.R. § 124.15(a) ("a final permit decision means a decision *to issue*, deny, modify, revoke and reissue, or terminate a permit.") (emphasis added); *see e.g., In re Chem. Waste Mgmt. of Ind.*, 6 E.A.D. 66, 76 (EAB 1995) ("Section 124.19(a) authorizes the Board to review any condition of a permit decision (or as here, the permit decision in its entirety)."). *Cf. In re West Suburban Recycling and Energy Ctr., L.P.*, 6 E.A.D. 692, 698 (EAB 1996) ("the Board has jurisdiction to consider any condition of a final PSD permit decision, including a decision to deny a permit."). Viewed in this light we reject IEPA's argument that the ESA issue that Petitioners now seek to raise on appeal is beyond the Board's jurisdiction.

Id. at 7-9 (internal footnotes omitted). We further acknowledged that, while the PSD regulations do not explicitly reference ESA procedures, we did not consider the absence of such a reference as necessarily preclusive of our consideration of an ESA-related issue in the PSD context. *Id*. at 9 n.7.

[139] In several places in its earlier briefs, the Agency stated that it had "voluntarily" initiated consultation. *E.g.*, OGC Post-Consultation Br. at 2, 3. Notably, in its latest brief, the Agency has concluded that ESA section 7(a)(2) applies to the issuance of a federal PSD permit by EPA, or a state

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tion" pursuant to 50 C.F.R. § 402.13. *See* Region Status Report ¶¶ 1-3. Region 5 concluded that issuance of Indeck's permit was not likely to adversely affect any federally-listed species or the designated habitat of such species.[140] Status Report ¶ 2; OGC Post-Consultation Br. at 2; *accord* OAR Post-Consultation Br. at 2. FWS concurred in writing with this conclusion. *See* Status Report ¶ 3 & attach. 1 (Letter from John D. Rogner, Field Supervisor, FWS, to Pamela Blakley, Chief, Air Permits Section, U.S. EPA Region 5 (June 9, 2005)) [hereinafter "FWS Concurrence Letter"].

Following the completion of consultation, the Board lifted the stay in this case and asked the participants to address certain questions, including whether IEPA planned to take any further action with respect to the permit as a result of the ESA consultation process. *See* Order Lifting Stay and Requiring Additional Briefing at 3 (July 21, 2005). In its response brief, IEPA explains that it does not intend "to undertake any additional action with respect to the PSD permit at this time," such as reopening the permit for additional public comment or, presumably, placing the information into the administrative record. IEPA Supplemental Brief at 1-2. IEPA asserts that the ESA consultation process cannot be said to have raised "substantial new questions" regarding the permit in light of the fact that the outcome of the consultation was that no species "are likely to be adversely affected." *Id*. at 7. IEPA also argues that Petitioners should not be allowed to further amend their petition in connection with this issue. *Id*. at 12-13.

Shortly thereafter, Petitioners filed a brief responding to IEPA's arguments and raising several new concerns arising from the consultation process. In their brief, Petitioners claim that the consultation process generated significant new information about Indeck's proposed facility that "goes to the heart of at least two PSD requirements: the soils and vegetation analysis required by 40 C.F.R. [§] 52.21(o) and the obligation to consider environmental impacts as part of a BACT determination collateral impacts analysis." Pet'rs Post-Consultation Br. at 5-6; *see also* Openlands Br. at 4-5 (referring to the soils and vegetation analysis). Petitioners argue that the permit should therefore be remanded, the adminis-

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(or local air pollution control district) delegated to act on EPA's behalf, and that consultation is thus required in a circumstance like this. *See, e.g.*, OAR Post-Consultation Br. at 1-2, 4. Because the Agency has apparently conceded that its consultation was not voluntary, we will not refer to Region 5's consultation as "voluntary" except when summarizing any arguments made by the Agency in which the Agency itself uses this term.

[140] During the informal consultation, the agencies determined that *four* species (not two as originally thought) were potentially implicated. *See* Status Report ¶ 1. In addition to the eastern prairie fringed orchid (*Plantanthera leucophaea*) and the leafy prairie clover (*Dalea foliosa*), the agencies determined that the Hines emerald dragonfly (*Somatochlora hineana*) and the lakeside daisy (*Hymenoxys herbacea*) were located in the Midewin. *Id*., attach. 2 at 3 (Letter from Pamela Blakley, Chief, Air Permits Section, USEPA Region 5, to John Rogner, Field Supervisor, FWS (June 7, 2005)).

trative record should be reopened to add the ESA consultation documents, and the public should be afforded a meaningful opportunity to comment on this new information. Pet'rs Post-Consultation Br. at 7; Openlands Br. at 7-8.[141]

Petitioners argue in the alternative that, if the final permit is not remanded based on the above-mentioned grounds, Petitioners should be allowed to amend their Petition. Pet'rs Post-Consultation Br. at 15. Petitioners assert that "[t]he information generated as part of the ESA consultation process raises significant new issues and potential arguments as to the lawfulness of the Indeck PSD permit," many of which were not reasonably ascertainable or reasonably available in 2003 during the public comment period.[142] *Id*. at 15.

As noted earlier in this decision, *supra* Part I.C., OGC also filed briefs following the completion of the consultation process that responded to questions raised by the Board. *See* OGC Post-Consultation Br.; OAR Post-Consultation Br.; *see also* Order Requesting OGC to File a Brief (Dec. 1, 2005); Order Requesting OGC to Answer Remaining Questions (Jan. 27, 2006). In its first brief, OGC argues that the ESA issues have been mooted because Region 5 "voluntarily" completed an informal consultation with the FWS. OGC Post-Consultation Br. at 2. OGC also argues that neither the ESA nor the implementing regulations "provide for public involvement in or comment on the consultation process," and thus Petitioners have no right *under the ESA* to comment on Region 5's "voluntary" consultation. *Id*. at 4. OGC also appears to support IEPA's decisions not to supplement the administrative record for the permit with the information developed during the consultation process and not to reopen the comment period to allow the public to comment on that material. *See id.* at 5-9. In its second brief, OGC/OAR reiterate their position that the ESA issues in this case have been mooted by Region 5's informal consultation with the FWS. OAR Post-Consultation Br. at 4. OGC/OAR also provide their interpretation of the interplay between the federal PSD program and section 7(a)(2) of the ESA. *Id*. at 5.

Following EPA's filing of these briefs, Petitioners requested and were granted leave to file a response. Petitioners' Motion for Leave to File Response Brief (received April 5, 2006); Order Granting Motion for Leave to File Brief

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[141] For the most part, these issues relate to the concerns regarding the soils and vegetation analysis discussed previously in this opinion. *See supra* Part II.B.

[142] In their brief, Petitioners additionally raise a series of somewhat connected issues allegedly arising out of this and other newly-obtained information. Pet'rs Post-Consultation Br. at 16-22. These other issues include assertions that the permit is stale, that the permit limits for NO_x and SO_2 do not reflect BACT, that another recently-issued permit demonstrates that Indeck's permit is missing mandatory provisions, and that Indeck has made a material change to its project design without obtaining a permit modification. *Id*. Because these allegations do not raise ESA issues *per se*, we address them in other parts of this decision. *See infra* Part II. K.; *see also supra* Parts II. C. & II.G. (for our discussion of the SO_2 and NO_x issues).

(April 5, 2006). In their latest brief, Petitioners generally argue that their "ESA claims cannot be dismissed on mootness grounds because there remain unresolved allegations of procedural and substantive ESA violations." Pet'rs Post-Consultation Reply Br. at 1, 5 & n.2. Petitioners describe these allegedly unresolved procedural and substantive ESA violations, *id*. at 5-9,[143] and request that the Board allow them to amend their petition with these claims should it not order a remand directing that the ESA materials be included in the administrative record and subjected to public review and comment.[144] *Id*. at 1, 17 & n.2.

3. *Analysis of the ESA Issues*

a. *Does the ESA Apply to Delegated PSD Programs?*

Petitioners' ESA claims raise the threshold question of whether the Agency is even required to meet ESA section 7(a)(2) requirements in those jurisdictions, such as Illinois, where the Agency has delegated the federal PSD program. Unlike the Agency's regulations governing the issuance of other permits, such as Clean

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[143] In particular, Petitioners assert that: (1) because the consultation occurred after the permit had been issued, the ability of the FWS to suggest modifications to the permit (i.e., permit conditions) was curtailed, Pet'rs Post-Consultation Br. at 6; (2) "[c]urtailing the ability of FWS to propose mitigation measures prior to the conclusion of a consultation process is patently unlawful" and is in violation of ESA section 7(d), *id*. (citing *NRDC v. Houston*, 146 F.3d 1118, 1128-29 (9th Cir. 1998)); (3) the integrity of the consultation process was impacted for this reason as well in that the agencies "did not approach the issue with an open mind, but 'rather with a view to defending a decision he or she already has made,'" *id*. (quoting *In re Atochem N. Am.*, 3 E.A.D. 498, 499 (Adm'r 1991)); (4) the conclusion that the leafy prairie clover is not likely to be adversely affected by the facility was erroneous, *id*. at 8; and (5) there were a number of technical problems with the information used in the consultation process, including with respect to the inputs the agencies used in their ESA modeling runs (arguing that the agencies used emission rates for sulfuric acid mist and hydrogen fluoride that are lower than the levels required by the Indeck permit), *id*. at 7.

Petitioners also claim that new information indicates that IEPA is proposing "to issue Indeck a water discharge permit that authorizes Indeck to use recycled waste water containing high levels of radium and other hazardous air pollutants as non-contact cooling water." Pet'rs Post-Consultation Reply Br. at 8 & n.4. It appears that some of this information was released after the ESA consultation was concluded. Furthermore, Petitioners seem to suggest that Region 5 should have reinitiated consultation regarding this issue. This issue seems to be outside the scope of the original ESA issues raised before us in this proceeding, and we therefore find it to be procedurally barred.

[144] In this section of their brief, Petitioners also claim that the Agency's "insistence that the consultation was 'voluntary' raises additional questions about the seriousness with which the Region embraced the consultation process, despite the Agency's new-found recognition that section 7(a)(2) of the ESA applies to PSD permit reviews." Pet'rs Post-Consultation Reply at 7. We think this concern is misplaced for two reasons. First, the Agency has apparently ceased claiming the consultation was voluntary, as Petitioners themselves recognize. *See id.* Second, as the Petitioners state, the consultation process "generated more than 300 pages of technical report, two computer discs with modeling data and many additional pages of correspondence." *Id*. at 2. In our view, this demonstrates that the agencies involved took the process seriously.

Water Act NPDES permits, Underground Injection Control ("UIC") permits, and Resource Conservation and Recovery Act ("RCRA") permits where the regulations expressly refer to the consideration of the ESA when issuing permits under those statutes, the PSD regulations are silent as to the interplay between the CAA and the ESA. *In re Metcalf Energy Ctr.*, PSD Appeal Nos. 01-07 & 01-08, at 42 n.20 (Aug. 1, 2001); *see also In re Ash Grove Cement Co.*, 7 E.A.D. 387, 428-29 (EAB 1997) (referring to EPA's RCRA regulations at 40 C.F.R. § 270.3(c))*; In re Dos Republicas Resources Co.*, 6 E.A.D. 643, 649 & n.27 (EAB 1996) (referring to EPA's NPDES regulations at 40 C.F.R. § 122.49); *In re Renkiewicz SWD-18*, 4 E.A.D. 61, 65 (EAB 1992) (referring to EPA's UIC regulations at 40 C.F.R. § 144.4). This question is vexing because it appears that the various EPA Regions have, at times, interpreted the synergy between these two statutes differently and have not always taken consistent approaches to the ESA in their delegation agreements and practices. *See* Amended Petition at 44; Pet'rs Post-Consultation Br. at 13-15 (pointing out the regional differences as well as mentioning the fact that Region 5 has now initiated consultation for other IEPA PSD permits). *Compare* IEPA Suppl. Br. at 8 (explaining that IEPA's "delegation agreement is silent with respect to the treatment of ESA-related issues") *with Metcalf*, slip op. at 42 (noting that, in the Region 9/Bay Area District PSD delegation agreement, Region 9 retains ESA responsibilities even though the District has been delegated authority to issue PSD permits). IEPA itself indicates that there has been a lack of "meaningful guidance" on this issue, IEPA Suppl. Br. at 9, which may have led, at least in part, to the ESA-related problems in this case. For these reasons, the Board requested that OGC offer its views on this matter.[145] *See, e.g.*, Order Requesting OGC to File a Brief (Dec. 1, 2005); Order Requesting OGC to Answer Remaining Questions (Jan. 27, 2006).

In the most recent brief filed in response to the Board's request, OGC/OAR state that, in their view, "section 7(a)(2) of the ESA applies to the issuance of a federal [PSD] permit by EPA or a state delegated to act on EPA's behalf."[146]

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[145] This particular question was first joined by Region 5's original determination that consultation with the FWS "was not appropriate because EPA lacks discretionary authority." *See* Amended Petition, Ex. P at 1. IEPA, in its earlier briefs in this appeal, stated that "[t]he responsibilities borne by federal agencies under the ESA are generally non-delegable to state permit authorities," IEPA Response at 104, and thus "defer[red] to its federal counterparts at USEPA/Region 5 and/or the Office of General Counsel for any interpretations of applicable law in this matter," *id*. at 105. The relevant EPA offices, however, did not initially provide a position on this issue, arguing that the issue was either moot or unripe. *See* Response of OGC to the Board's February 3, February 4, and March 19, 2004 Orders at 2-3. OGC/OAR now argue that this question has been mooted by Region 5's consultation with the Service. OGC Post-Consultation Br. at 2, 3-4; OAR Post-Consultation Br. at 4-5. This question is discussed further below.

[146] OGC/OAR indicate that this is likewise true for those local pollution control districts to which EPA has delegated the PSD program. OAR Post-Consultation Br. at 1 n.1. Because a state-delegated program is at issue in this case, we will for purposes of simplicity only refer to "states" in the remainder of our discussion.

OAR Post-Consultation Br. at 1 (footnote omitted); *accord id.* at 5. OGC/OAR explain that, under the ESA and its implementing regulations, issuance of a federal PSD permit qualifies as an "action authorized, funded, or carried out by EPA," thereby implicating ESA section 7(a)(2). *Id*. at 5. OGC/OAR further explain that:

> Federal PSD permits can include permits issued directly by EPA or, as in this case, by a delegated state acting on EPA's behalf. Where EPA delegates administration of the federal PSD program, the delegate state implements the substantive and procedural aspects of the federal PSD regulations on behalf of EPA pursuant to a negotiated agreement. Thus, in issuing the Indeck permit pursuant to a delegation agreement with EPA, IEPA simply stands in the shoes of EPA, and the permit remains a federal action for ESA purposes.

Id. at 5-6 (internal citations omitted).[147] OGC/OAR also state that although they construe the scope of their discretion under the PSD permitting program "to be limited by the terms of section 165 of the CAA, section 165 arguably provides EPA limited discretion to consider and address impacts on listed species that may result from issuance of a federal PSD permit." *Id*. at 6 (internal footnote omitted). They emphasize that, although ESA section 7(a)(2) applies to the issuance of these PSD permits, this does not always mean that consultation is required because the Agency may conclude that the permit has no effect on listed species or critical habitat. *Id*. at 6-7.

Upon consideration of the CAA, the ESA, the PSD regulations, and the ESA implementing regulations, we generally agree with and adopt the OGC/OAR analysis and interpretation on this point. As the Board has explained on several occasions, PSD permits issued pursuant to a delegation agreement between EPA and a state are considered federally-issued permits under the Agency's regulations. *E.g., In re Three Mountain Power, L.L.C.*, 10 E.A.D. 39, 40 n.1 (EAB 2001); *In re W. Suburban Recycling & Energy Ctr*., 6 E.A.D. 692, 695 n.4, 703 (EAB 1996) (noting that "IEPA stands in the shoes of EPA for purposes of implementing the federal PSD permit program"); *In re SEI Birchwood, Inc*., 5 E.A.D. 25, 26 (EAB 1994); *see also* 40 C.F.R. § 124.41 (defining the term "EPA" to mean the delegate agency in situations where the Agency has delegated authority to administer the PSD program to the agency); 45 Fed. Reg. 33,412 (May 19, 1980) ("For purposes of Part 124, a delegate State stands in the shoes of the Regional

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[147] OGC/OAR note that their analysis would differ for those PSD permits issued by states or eligible Indian tribes under a PSD program approved by EPA in a state or tribal implementation plan. OAR Post-Consultation Br. at 6 n.2.

Administrator [and must] follow the procedural requirements of part 124. * * * A permit issued by a delegate is still an 'EPA-issued permit' * * * .").

As a federally-issued permit, a PSD permit issued by a delegated state would therefore fall within the meaning of federal "action" as that term is used in the ESA. Consequently, ESA section 7(a)(2) would apply to such permit issuance unless the Agency somehow lacks "discretionary involvement or control." 50 C.F.R. § 402.03. This term has not been explicitly defined by the FWS in its regulations. *See id.* § 402.02 (definitions section). Federal courts, however, have determined that an agency retains discretionary involvement or control when it has "the ability to implement measures that inure to the benefit of the protected species." *E.g., EPIC v. Simpson Timber Co.*, 255 F.3d 1073, 1080 (9th Cir. 2001) (quoting *Sierra Club v. Babbitt*, 65 F.3d 1502, 1509 (9th Cir. 1995)); *accord Turtle Island Restoration Network v. Nat'l Marine Fisheries Serv.*, 340 F.3d 969, 974 (9th Cir. 2003). In other words, "where there is no agency discretion to act, the ESA does not apply." *Natural Res. Def. Council v. Houston*, 146 F.3d 1118, 1125-26 (9th Cir. 1998); *accord Ground Zero Ctr. for Non-Violent Action v. U.S. Dep't of the Navy*, 383 F.3d 1082, 1092 (9th Cir. 2004). On occasion, courts have found circumstances in which an agency did not have discretionary involvement or control over its action. *E.g.,Ground Zero*, 383 F.3d at 1092; *EPIC*, 255 F.3d at 1082; *Sierra Club*, 65 F.3d at 1509. For example, where the Bureau of Land Management ("BLM") granted a right-of-way to a private party prior to the enactment of the ESA, and the BLM could take no further action relevant to a threatened or endangered species prior to the private party's exercise of its contractual rights, thereby rendering any consultation meaningless, the reviewing court concluded that BLM lacked the requisite discretion. *Sierra Club*, 65 F.3d at 1509.

Likewise, in *EPIC v. Simpson Timber Company*, the Court of Appeals for the Ninth Circuit held that, because the FWS did not retain discretionary control to alter an incidental take permit it had issued prior to the listing of two species and could not take any action to inure to the benefit of those newly-listed species, the Service was not required to reinitiate the consultation process. *EPIC*, 255 F.3d at 1083. The initial issuance of a PSD permit does not appear analogous to either of those situations, both of which involved agency activity that had already been completed and for which there was no ongoing regulatory authority. Moreover, we have found no PSD provisions or regulations that purport to proscribe the consideration of a facility's impacts on threatened or endangered species, nor do either IEPA or EPA point to any that do. *Cf. Ground Zero*, 383 F.3d at 1082 (explaining that, where the agency has no discretion to site the project because the President has already made that decision, consultation by the Navy over the risk of siting the project at that location "would be an exercise in futility").

In fact, we find the converse is true. The CAA provides that, in establishing BACT limits, the permit issuer is to "tak[e] into account energy, *environmental*, and economic *impacts* and other costs." CAA § 169(3), 42 U.S.C. § 7479(3)

(emphasis added). We think "environmental impacts" is most naturally read to include ESA-identified impacts to endangered or threatened species. Furthermore, the CAA essentially requires an analysis of the "soils and vegetation * * * in the area potentially affected by the emissions," which may likewise be informed by ESA-identified impacts on endangered or threatened vegetative species. CAA § 165(e)(3)(B), 42 U.S.C. § 7475(e)(3)(B); *accord* 40 C.F.R. § 52.21(o). These statutory predicates would appear to provide the necessary authority to address ESA-related concerns through the provision of ameliorative conditions in the permit, particularly where the endangered or threatened species is a plant species (i.e., is "vegetation"). *C.f. Turtle Island*, 340 F.3d at 977 (finding that statute allowing action agency to issue permits entrusted action agency with discretion to condition permits to inure to the benefit of listed species). We therefore conclude that the CAA's PSD requirements and the ESA requirements are appropriately viewed as complementary in nature, such that impacts on ESA-identified threatened and/or endangered species can be taken into account when considering a PSD permit application and establishing a permit's terms and conditions. As the Ninth Circuit has noted, "an agency cannot escape its obligation to comply with the ESA merely because it is bound to comply with another statute that has consistent, complementary objectives." *Wash. Toxics Coal. v. EPA*, 413 F.3d 1024, 1031 (9th Cir. 2005) (concluding that "compliance with FIFRA [the Federal Fungicide, Rodenticide, and Rodenticide Act] requirements does not overcome an agency's obligation to comply with environmental statutes with different purposes," in particular, the ESA), *cert. denied*, *CropLife Am. v. Wash. Toxics Coal.*, 126 S. Ct. 1024 (2006); *see also Headwaters, Inc. v. Talent Irrigation Dist.*, 243 F.3d 526, 531-32 (9th Cir. 2001) (finding that FIFRA and the Clean Water Act ("CWA") have different and complementary purposes and thus the registration and labeling of a substance under FIFRA does not exempt a party from its CWA obligations).

In short, we find that federal PSD permits, including those issued by a delegated state, fall within the meaning of federal "action" as that term is used in the ESA. Accordingly, ESA consultation is required in this setting when the permitting decision "may affect" listed species or designated critical habitat. 50 C.F.R. § 402.14(a).

b. *What Is the Time Frame for Complying With The ESA's Consultation Requirements and Was It Met In This Case?*

Although the ESA regulations allow a federal agency, upon written notice to the FWS, to designate non-federal representatives to perform certain section 7 activities, including conducting informal consultations, the federal agency retains "[t]he ultimate responsibility for compliance with section 7." 50 C.F.R. § 402.08. Thus, in this case, Region 5 had the ultimate responsibility for ensuring compliance with the ESA in the context of the permit before us. The question now at hand pertains to *when* during the PSD permitting process consultation should

occur and the attendant question of whether Region 5 met this deadline in this case. Petitioners argue that the two processes – ESA consultation and PSD permit development – must be performed in a concurrent and integrated fashion. Pet'rs Post-Consultation Br. at 13-15. OGC/OAR, however, take the position that ESA consultation, whether formal or informal, may proceed entirely separate from the PSD process. OAR Post-Consultation Br. at 8. OGC/OAR further posit that consultation should "ordinarily" conclude before issuance of a final federal PSD permit, but does not "necessarily" have to be completed prior to the issuance of the draft permit and the public comment period. *Id*. Moreover, with respect to the case at hand, they argue that, because Petitioners appealed Indeck's permit to the Board, which essentially delayed "final agency action" on the permit and thereby allowed the Agency to initiate and complete consultation prior to the permit becoming a "final agency action," consultation was timely. OAR Post-Consultation Br. at 9 & n.5.

We agree with the proposition that to ensure compliance with the law, any consultation required under the ESA[148] should in the ordinary course conclude prior to issuance of the final federal PSD permit. Notably, neither the CAA PSD provisions nor the associated PSD regulations specifically mention the ESA or in any way require that the PSD and ESA processes be performed concurrently or be integrated. Although Petitioners argue that several statutory and/or regulatory provisions should be "read together" to require that the two processes be performed in this manner, *see* Pet'rs Post-Consultation Br. at 11, we do not find this argument persuasive because none of the cited PSD provisions reference the ESA, much less specify a time frame for ESA consultation. Consequently, we conclude that the PSD and ESA processes are separate and need not necessarily be performed simultaneously or in a wholly integrated fashion.[149]

This being said, while neither the ESA nor its implementing regulations specify when the consultation process needs to be completed vis-a`-vis the associ-

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[148] Again, consultation is not required for all PSD permits. As OAR/OGC points out, consultation is required only when the federal action "may affect" listed species or designated critical habitat. OAR/OGC Brief at 6.

[149] In a somewhat analogous situation, we considered the question of when National Environmental Policy Act ("NEPA") reviews should be performed in the PSD permitting context. *See In re Hadson Power-Buena Vista 14*, 4 E.A.D. 258, 297-300 (EAB 1992). Unlike the ESA, NEPA is actually referenced by the PSD regulations. *See* 40 C.F.R. § 52.21(s). Specifically, the PSD regulations provide that review "conducted pursuant to this section [of the regulations] shall be coordinated with the broad environmental reviews under [NEPA] * * * to the maximum extent feasible and reasonable." *Id*. Because the PSD regulations do not mandate precisely how the two analyses be conducted or linked, we concluded that "*coordination* [of the PSD and NEPA reviews] is all that is required of the PSD permitting authority, and only to the extent feasible and reasonable." *Hadson Power*, 4 E.A.D. at 299. Such an interpretation of the permitting authority's requirements applies even more strongly here where there are no regulations that specifically link the PSD and ESA requirements.

ated agency action, the statute does prohibit an agency from, "mak[ing] any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures," after consultation with the Service is initiated. ESA § 7(d), 16 U.S.C. § 1536(d). In the ordinary course,[150] the issuance of a final PSD permit would appear to be the point at which the permitting agency has irretrievably committed itself with respect to the discrete act of permitting a given activity.[151] Accordingly, to avoid violating this requirement, the Agency should complete the ESA process prior to the issuance of the final permit. *See, e.g., NRDC v. Houston*, 146 F.3d 1118, 1127-29 (9th Cir. 1998) (concluding that an agency's decision to enter into 40-year water contracts prior to completing consultation with the Service was an irreversible and irretrievable commitment of resources); *Lane County Audubon Soc'y v. Jamison*, 598 F.2d at 290, 295 (9th Cir. 1992) (concluding that timber sales while consultation was ongoing constitute irreversible and irretrievable commitment of resources). This ensures that, if FWS recommends any changes to the permit during the consultation process or, alternatively, if EPA decides to add or amend permit conditions based on any information or findings that arise during the ESA consultation process, such changes may be implemented in the final PSD permit.[152] *See Houston*, 146 F.3d at 1129.

Indeed, it may be prudent for the Agency to move consideration of ESA even farther up the permit development chain, where there is "more flexibility to make, and * * * to implement, suggested [ESA-related] modifications." *Id.* Additional advantages of earlier engagement on ESA include the possible use, where appropriate, of ESA-generated materials as part of the record supporting the permit decision. In the case before us, had consultation occurred earlier in the process, the ESA-related information generated by Region 5 during consultation might have offered substantial additional record content on the question of vegetation impacts. In this sense, it might well have been helpful in avoiding the risks of deferred consultation made manifest here – that there may be inadequate information in the administrative record concerning impacts of the facility on vegeta-

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[150] As discussed more fully below, when an appeal is filed, it effectively postpones final agency action on the permit. Accordingly, consultation during the pendency of an appeal can meet minimum legal requirements.

[151] The fact that a permit once issued may subsequently be amended does not diminish the irretrievable nature of the decision to issue the permit as amendments are discrete actions independent from the decision to issue the permit in the first instance.

[152] As OGC/OAR have noted, "[a]s a practical matter, EPA must retain sufficient control over the PSD permitting process administered by a delegated state to allow time for any required consultation to occur and to ensure that permitting and project activities do not proceed beyond a point that would affect EPA's ability to comply with the ESA." OAR Post-Consultation Br. at 7.

tion, including endangered plant species. *See supra* Part II. B.[153]

Nonetheless, with respect to the question of whether the Agency's ESA compliance was timely in this case, we find that, as a technical matter, because the permit before us is not yet "final," the consultation undertaken in this case met minimum legal standards.[154] In this case, consultation took place during the pendency of an appeal, which pursuant to the relevant regulations, had the effect of deferring final agency action on the permit. *See* 40 C.F.R. § 124.19(f)(1). Up to the time of final agency action, there remains legal capacity to adjust the terms of the permit.[155] Accordingly, consultation cannot be viewed as an empty gesture incapable of influencing the outcome; FWS and the Region had the opportunity to analyze the situation and, as necessary, specify protective conditions for inclusion in the permit.[156] Had the FWS or the Region found a negative impact and speci-

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[153] It seems self-evident that earlier consideration of ESA requirements would also be advantageous from the applicant's perspective, in that disconnected processes may cause delay in the permitting process, as has occurred here. We note that, in connection with these section 7(a)(2) requirements, the ESA requires that federal agencies "consult with the Secretary on any prospective agency action at the request of, and in cooperation with, the prospective permit or license applicant if the applicant has reason to believe that an endangered species or a threatened species may be present in the area affected by his project and that implementation of such action *will likely affect such species*." ESA § 7(a)(3), 16 U.S.C. § 1536(a)(3). When an applicant is aware that its project may implicate an endangered or threatened species and/or its critical habitats, the applicant may want to consider pursuing this course of action as a means of avoiding delay. *See* 50 C.F.R. § 402.11(b) ("If a prospective applicant has reason to believe that the prospective action may affect listed species or critical habitat, it may request the Federal agency to enter into early consultation with the Service.").

[154] We recognize that our approach here could be viewed as a refinement of our thinking in *In re Ash Grove Cement Co.*, 7 E.A.D. 387 (EAB 1997). In *Ash Grove*, as in this case, the relevant Region did not consult with FWS regarding ESA impacts or receive written concurrence of no adverse effect to endangered or threatened species or critical habitat until after the permit (RCRA) was issued, and there, as here, we found consultation during the pendency of the appeal sufficient for ESA purposes. In the course of so ruling, however, we stated in dicta, "it appears that the [r]egion *failed to satisfy the regulatory requirements* for endangered species consultation prior to issuance of the permit." *Id*. (emphasis added). Here, with the benefit of more fulsome briefing on the issue, we find more nuance in the dynamic, concluding that waiting to consult as late as during the pendency of a PSD appeal can meet minimum legal requirements, although it is prudentially inadvisable.

[155] In other words, there had not yet been an irretrievable commitment to the permit by IEPA within the meaning of ESA§ 7(d), 16 U.S.C. § 1536(d).

[156] Petitioners argue FWS's ability to suggest modifications to the permit conditions was curtailed because the consultation occurred after the permit had been issued and that the integrity of the consultation process was thus compromised. Pet'rs Post-Consultation Reply Br. at 6. While it is true that the Service stated that had consultation occurred earlier "options for ensuring that adverse effects are avoided may have been considered," FWS Concurrence Letter at 2, the Service also stated that "[d]espite these shortcomings, [it] stand[s] by the process and the conclusions made during this consultation," *id*., which include its "concur[rence] that the deposition of Hazardous Air Pollutants (HAPs) is not likely to adversely affect listed species." *Id*. at 1. While, as we have noted, it would have been far better if the ESA consultation process had proceeded earlier, in light of these latter FWS statements,

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fied ameliorative conditions, IEPA was not beyond the point of being able to make changes to the permit based on FWS' and/or the Region's input.[157]

While we reject the view that the permit decision before us is legally defective because consultation was not earlier undertaken, as we have already noted, consultation should ordinarily occur at an earlier stage of the permit proceeding. To the extent that there has been ambiguity regarding the application of ESA in the PSD context, OGC has now recognized, and we agree, that ESA § 7 does apply in this setting. Accordingly, EPA Regions and delegated states must, to the extent that they have not done so heretofore, ensure ESA compliance within their PSD permitting processes.[158] In this particular case, an appeal was taken, postponing the finality of the permit decision, and allowing the potential for ESA compliance after IEPA had issued the final permit. By all appearances, had an appeal not been taken, and consultation not been undertaken during the pendency of this appeal, this permit would have gone final in dereliction of legally binding ESA requirements. *See Ash Grove*, 7 E.A.D. at 429. It goes without saying that not all permit decisions are appealed, and an ESA compliance strategy that acknowledges ESA only in the event of an appeal is not a compliance strategy at all, in that it would tolerate an ESA violation whenever an appeal is not taken. Accordingly, we would expect that ESA consultation would ordinarily be completed, at the very latest, prior to issuance of the permit and, optimally, prior to the comment period on the permit, where the flexibility to address ESA concerns is the greatest.

Our decision that the permit before us satisfied minimum legal standards under the ESA does not answer the question of whether any of the information developed during the ESA process has bearing on other aspects of the PSD decisionmaking process with respect to which IEPA had an independent, PSD-based obligation (e.g., the soils and vegetation analysis). In that setting, the documents generated during the ESA consultation process may be instructive in the context of the permitting agency's decision. This issue has already been considered in Part II.B., above.

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we see no reason to question the Service's willingness to arrive at a different substantive conclusion had it seen the situation as deserving of such a response, and accordingly do not see present here the kind of compromise in integrity suggested by Petitioners.

[157] Thus, we disagree with Petitioners' newly-raised claim that Region 5 violated section 7(d). *See also supra* note 137.

[158] This does not mean *consultation* is required for all PSD permits. *See supra* note 148.

c. *Petitioners' Argument That They Should Have Been Afforded Public Comment on the ESA Materials*

Petitioners maintain the permit is procedurally defective under the ESA because IEPA did not add the ESA consultation materials to the administrative record and allow the public to review and comment on those ESA materials. *See, e.g.*, Pet'rs Post-Consultation Reply Br. at 15-16; *see generally* Pet'rs Post-Consultation Br. at 12-22. Apparently, in Petitioners' view, whether or not the ESA-generated materials influenced the terms of the PSD permit, those materials required public process as part of the PSD permitting procedure. Significantly, although they maintain that the obligation to afford public process relative to these materials derives from the CAA, Petitioners do not reference any provision of the CAA or the implementing regulations that would require such process as a matter of course in relation to ESA-generated materials. Rather, they point to the fact that the ESA and the regulations promulgated do not preclude public comment on ESA materials in this context.

We find no provision of law that would require public notice and comment in this context relative to the materials in question. More specifically, neither the CAA nor the PSD permit regulations make mention of public process pertaining to ESA consultation, and the ESA and the regulations promulgated thereunder, if anything, point to a contrary conclusion.

The question of whether the public should be able to comment during an interagency consultation process under ESA section 7 was addressed by the FWS and NMFS during the rulemaking for the ESA Consultation Regulations. In response to the proposed rule, commenters had requested increased public participation in the consultation process, including: (1) public notice of each request for consultation; (2) public notice of the agenda for each consultation; (3) public notice of consultation results; (4) public comment periods; and, (5) prescribed rights to appeal by the public. 51 Fed. Reg. at 19,928. In the preamble to those regulations, the Services specifically addressed public participation issues, stating that:

> Nothing in section 7 authorizes or requires the Service to provide for public involvement (other than that of the applicant) in the "interagency" consultation process. Moreover, due to the statutory time constraints imposed on the consultation procedures, it would not be practicable to implement such detailed public participation measures.

Id. While the Services did observe that "[p]ublic participation may be provided within the Federal agency's decisionmaking process," *id.* at 19,928, they also qualified that observation as follows: "However, that is a function of the agency's

regulations or substantive legislation and not an issue to be raised in the context of consultation." *Id.* As we have observed, neither the CAA nor the relevant agency regulations provide such a right.

In sum, we find nothing in the CAA, the ESA, or the relevant implementing regulations that supports Petitioners' contention that they must, as part of their participation in the PSD permit decision, be afforded public process concerning the Region's and the FWS's ESA consultation.[159] Accordingly, we reject Petitioners' argument.

d. *Petitioners' Request to Amend the Petition to Challenge Substance of ESA Decisions and Analysis*

As noted, Petitioners have requested that, in the event that we do not remand the permit to compel IEPA to include the new ESA consultation materials in the administrative record and allow public review and comment relative to those materials, they be granted leave to amend their petition a second time to raise substantive questions regarding the quality of ESA analysis and decisionmaking. *See* Pet'rs Post-Consultation Reply Br. at 17; *see generally*, Pet'rs Post-Consultation Br. at 2, 4-6. Given our remand of the permit relative to the PSD soils and vegetation analysis, there is some question whether Petitioners' objectives have been sufficiently realized to forego a second amended petition. But, in any case, we deny their request to file an amended petition, as the issues they would advance would present jurisdictional problems.

As indicated in their Post Consultation Brief, Petitioners would amend their petition to argue that the FWS failed to faithfully discharge its ESA obligations in terms of its analysis of and conclusions regarding ESA impacts. *See id*. at 2. Plainly, challenges to the actions of the FWS belong in a different forum; the Board does not have jurisdiction to review the Service's decisions. Such concerns should have been pursued as a separate Administrative Procedure Act ("APA") challenge to the FWS's decisionmaking.[160]

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[159] Of course, as we observed earlier in this decision, *see supra* note 70, this does not preclude the permitting Agency from relying upon ESA-related materials in making *PSD determinations* (i.e., soil and vegetation analysis). To the extent that ESA-related documentation is relied upon by a permitting authority in this manner, such documentation must be included in the administrative record for the permit.

[160] *See, e.g., San Francisco Baykeeper v. U.S. Army Corps of Engineers*, 219 F. Supp. 2d 1001 (N.D. Cal. 2002) (stating that challenges to final agency actions taken pursuant to the ESA are subject to the review provisions of the Administrative Procedure ("APA") and that a letter of concurrence from the Service under the ESA is a final agency action subject to review pursuant to the APA); *Sierra Club v. Flowers*, 423 F. Supp. 2d 1273 (S.D. Fla. 2006) (reviewing challenges to action agency's determination that there would be no adverse effect upon any species and FWS's concurrence as APA challenges).

Additionally, to the extent that Petitioners intend not just to challenge FWS's actions but also the Region's determination that issuance of Indeck's permit was "not likely to adversely affect any federally-listed species or the designated habitat of such species" (*see* Pet'rs Post-Consultation Br. at 4 (arguing that EPA should have formally consulted with FWS)),[161] here again there are jurisdictional problems. As discussed above, we have determined that PSD permits are federal actions covered by the ESA, such that consultation pursuant to the ESA is, when required, essentially a condition precedent to final agency action on the permit. A failure to consult where ESA consultation is required calls into question the legality of the permit in its entirety and is thus reviewable by the Board. *See supra* note 138. This being said, a foray into substantive decisionmaking under the ESA strikes us as a different proposition.[162] As we have observed, the PSD regulations neither reference ESA procedures nor make the ESA decisionmaking process an inherent part of the PSD permit issuance process. In the absence of regulatory (or statutory) incorporation, we think ESA substantive decisions are appropriately regarded as separately operative, with challenges to such decisions proceeding as APA challenges separate from PSD permit appeals.[163]

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[161] The ESA regulations only require formal consultation when the action agency determines that its action "is likely to adversely affect" listed species or critical habitat, 40 C.F.R. § 402.14(a), or when the FWS does not concur with an action agency's "not likely to adversely affect" determination. *E.g.*, *Southern Utah Wilderness Alliance v. Smith*, 110 F.3d 724, 729 (10th Cir. 1997). If the FWS declines to concur, the action agency must either initiate formal consultation or revise the project to avoid adverse impacts. Thus, by arguing that Region 5 should have formally consulted with FWS, Petitioners may in essence be questioning the Region's "not likely to adversely affect determination."

[162] Generally, the Board has found it appropriate to review substantive decisions deriving from other statutory regimes only when the applicable legal framework explicitly incorporates the requirements of other statute by reference, or when no other path for review is available. *E.g.*, 40 C.F.R. § 122.49 (incorporating NEPA and other environmental statutes in the NPDES permit program); *In re Dos Republicas Resources Co.*, 6 E.A.D. 643, 649 (EAB 1996) (NPDES permit) ("The regulations of ESA section 7(a) are implemented for the NPDES permit program by regulation at 40 C.F.R. § 122.49."); *In re Phelps Dodge Corp. Verde Valley Ranch Dev.*, 10 E.A.D. 460, 464 (EAB 2002) (NPDES permit) (reviewing, inter alia, NEPA and ESA challenges pursuant 40 C.F.R. § 122.49); *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 428-29 (EAB 1997) (RCRA permit) (citing to 40 C.F.R. § 270.3(c), which incorporates ESA regulations into the RCRA program); *In re City of Moscow*, 10 E.A.D. 135, 160-61 (EAB 2001) (noting that Board review does not ordinarily extend to consideration of the validity of prior, predicate regulatory decisions that are reviewable in other fora). Unlike other regulatory programs, the PSD program does not explicitly reference ESA procedures in its regulations, and review of an action agency determination under section 7 of the ESA is available in other fora via the APA.

[163] This is not to suggest that substantive ESA decisions cannot influence the content of a PSD permit, but only that they are subject to a separate appeal path. We have considered a number of other circumstances in which predicate regulatory decisions influence the content of EPA permit decisions but are nonetheless not reviewable in the context of a permit appeal. *See, e.g.*, *City of Moscow*, 10 E.A.D. at 158-161 (finding no clear error in permit issuer's decision to include total maximum daily load ("TMDL")-based limitations in NPDES permit, and declining to review challenges to underlying TMDL); *In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 736-38 (EAB 2006) (finding that

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K. *Other Issues*

Petitioners also raise an additional series of somewhat connected issues allegedly arising from certain newly obtained information. Pet'rs Post-Consultation Br. at 16-22. These issues include assertions that: (1) the permit's limits for NO_x and SO_2 do not reflect BACT; (2) IEPA has "conceded" several issues in this case by its issuance of a PSD permit to another facility, Prairie State Generating Station; (3) the permit is stale because the construction of the facility did not begin within 18-months of receipt of final permit approval; and (4) Indeck has made a material change to its project design without obtaining a permit modification. *Id.* For the following reasons, we deny review of these issues.

First, Petitioner's arguments regarding the permit's limits for NO_x and SO_2, though reasonably ascertainable, were not raised during the comment period and thus were not preserved for Board review. We therefore decline to address Petitioners' additional arguments related to these permit conditions.

Second, we reject Petitioners' assertion that IEPA "conceded" certain issues relating to the present permit when it issued the PSD permit for Prairie State Generating Station. *See id.* at 19-21. As the Board has previously explained, PSD permit determinations depend heavily on site-specific analyses which inevitably result in substantive differences from permit to permit. *In re BP Cherry Point*, 12 E.A.D. 209, 223 n.37 (EAB 2005); *see also In re Cardinal FG Co.*, 12 E.A.D. 153, 161 (EAB 2005) (explaining that "BACT is a site-specific determination"); *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 788-89 (Adm'r 1992) ("PSD permit determinations are made individually under the Act on a case-by-case basis * * * ."). Further, as the Board stated in *BP Cherry Point*, in a petitioner's objecting to certain PSD permit conditions, "it is insufficient for a petitioner merely to observe that a permit does not include some condition that has been adopted in a permit for some other facility." *BP Cherry Point*, 12 E.A.D. at 223 n.37.

Third, we reject Petitioners' assertion regarding the alleged staleness of the BACT analysis, principally because it is raised in the abstract and does not consider the treatment of this issue in the permit itself. Where a permit condition speaks to a particular issue, an argument relating to that issue must contend with the permit terms themselves. Here, Petitioners argue that the BACT analysis is stale because the permittee did not begin construction within 18 months of receipt of final approval as required by 40 C.F.R. § 52.21(r)(2). That section states that "[a]pproval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, * * * ." 40 C.F.R. § 52.21(r)(2).

(continued)
contested permit conditions were attributable to separately appealable state certification and therefore were not subject to Board review).

Petitioners overlook the fact that Source-Wide Permit Condition 2(a) contextualizes this regulatory provision, stating in part: "[t]his permit shall become invalid as applied to the plant and each CFB boiler at the plant if construction is not commenced within 18 months after this permit becomes *effective*, * * * pursuant to 40 C.F.R. [§]52.21(r)(2) * * * ." Source-Wide Condition 2(a) (emphasis added). As this condition makes clear, IEPA has, in the permit, interpreted "approval" in 40 C.F.R. § 52.21(r)(2) as meaning when the permit becomes effective.[164] Under the regulations governing permit proceedings, a PSD permit is not effective while a petition for review is pending before the Board. *See* 40 C.F.R. §§ 124.15(b)(2), .19. Petitioners have not addressed the relevant permit conditions in making their argument, and we thus decline to address it in the context of this Petition for Review.[165]

Finally, Petitioners state that IEPA's Division of Water recently held a public hearing on a draft Indeck National Pollutant Discharge Elimination System ("NPDES") permit.[166] Pet'rs Post-Consultation Br. at 21. According to Petitioners, Indeck proposes to use treated sewage water for its non-contact cooling needs rather than water from a nearby river and "Petitioners are not aware that IEPA has considered whether this is a major design change necessitating the need for a PSD permit modification." *Id*. However, because this alleged design change is part of a draft rather than a final NPDES permit, and because the NPDES permit conditions are beyond the scope of this PSD permit appeal, we decline to consider this issue in today's decision. On remand, however, IEPA should consider whether any changes to the PSD permit are appropriate in light of this alleged design change.

III. *CONCLUSION*

The permit is remanded. On remand, IEPA is directed to: (1) either reopen the permit proceedings to allow for public comment on permit Condition 9 or remove this condition from the permit (*see supra* Part II. A.); (2) either augment

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[164] We offer no view on the sustainability of IEPA's interpretation, as it has neither been challenged nor briefed.

[165] Although we decline review of the alleged staleness of the BACT analysis, the Board acknowledges that a significant amount of time has passed since the original BACT analysis. Under these circumstances, and because this decision remands the permit on certain issues, we suggest that, on remand, IEPA consider whether new information exists that might justify revisiting any portion of the BACT analysis.

[166] Section 301(a) of the Clean Water Act ("CWA"), 33 U.S.C. § 1311(a), prohibits the discharge of any pollutant from a point source into waters of the United States, except if the discharge is made in compliance with, among other things, an NPDES permit issued under CWA § 402, 33 U.S.C. § 1342. The NPDES program is one of the principal permitting programs under the CWA. *See* CWA § 402, 33 U.S.C. § 1342.

the response to comments document relating to the soils and vegetation analysis to clarify how its decision comports with the requirements for a more rigorous analysis and to address the comments received on this issue, or perform or consider analysis not presently in the record sufficient to address the Board's concerns and allow for public comment on any such analysis (Part II. B.); (3) provide further analysis of permit revisions substituting BACT numeric limits with work practice and operating standards during startup, shutdown, and malfunction events and make any revisions to the permit as appropriate (Part II. E.); and (4) provide further explanation and analysis for rejecting a more stringent limitation on PM emissions and reconsider whether a limitation on CPM is appropriate (Part II.F.).[167] Review is denied on all other issues. The Board suggests that, on remand, IEPA also consider the following matters: (1) whether, given the amount of time that has passed since the original BACT analysis, any new information exists that might justify revisiting any portion of the BACT analysis; and (2) whether any changes to the permit are appropriate in light of Petitioners' assertion that Indeck intends to use treated sewage water for its non-contact cooling needs rather than water from a nearby river. If, in considering these two matters on remand, IEPA decides that any revisions to the permit are appropriate, IEPA must modify the draft permit accordingly and, as appropriate, provide the public with notice and an opportunity to submit comments. Any such modifications will be subject to review by the Board in accordance with the procedures of 40 C.F.R. part 124.

So ordered.

[167] An administrative appeal of IEPA's decision on remand is required to exhaust administrative remedies under 40 C.F.R. § 124.19(f)(1). Any such appeal shall be limited to the issues within the scope of this remand.