Appeal No. 12-3388

IN THE UNITED STATES COURT OF APPEALS FOR THE SEVENTH CIRCUIT

CLEAN WATER ACTION COUNCIL OF NORTHEASTERN WISCONSIN, INC. et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY et al.,

Respondents,

GEORGIA-PACIFIC CONSUMER PRODUCTS LP,

Intervening Respondent.

Petition for Review of a Final Order of the Administrator of the United States Environmental Protection Agency, EPA Docket No. V-2011-1

PROOF BRIEF OF PETITIONERS CLEAN WATER ACTION COUNCIL OF NORTHEASTERN WISCONSIN INC., ET AL.

Dated: February 11, 2013

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Case: 12-3388 Document: 18 Filed: 02/11/2013 Pages: 147 CIRCUIT RULE 26.1 DISCLOSURE STATEMENT Pages: 147

Appellate Court No: 7

Short Caption: Clean Water Action Council of Northeastern Wisconsin, et al. v. EPA, et al., 12-3388

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Clean Water Action Council of Northeastern Wisconsin, Inc.

Midwest Environmental Defense Center, Inc.

(2) The names of all law firms whose partners or associates have appeared for the party in the case (including proceedings in the district court or before an administrative agency) or are expected to appear for the party in this court:

McGillivray Westerberg & Bender LLC

(3) If the party or amicus is a corporation:

i) Identify all its parent corporations, if any; and

None

ii) list any publicly held company that owns 10% or more of the party's or amicus' stock:

None

Attorney's	Signature: s/ David C. Bender		Date: February 11, 2013
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JURISDICTIONAL STATEMENT

This appeal seeks review of the United States Environmental Protection Agency ("EPA") Administrator's order under 42 U.S.C. § 7661d(b) in which she decided not to grant a petition seeking correction of an air pollution permit for the Georgia Pacific Consumer Products, L.P., paper mill in Green Bay, Wisconsin ("Order"). [JA _]

Pursuant to 42 U.S.C. § 7661d(b)(2), the "[a]ny denial of such petition shall be subject to judicial review under section 7607 of this title." Section 7607 provides that challenges to any final agency action of the EPA Administrator that is "locally or regionally applicable," as opposed to those identified as nationally applicable in the statute, are to "be filed in the United States Court of Appeals for the appropriate circuit... within sixty days from the date notice of such... action appears in the Federal Register...." 42 U.S.C. § 7607(b)(1); *Citizens Against Ruining the Env't v. EPA*, 535 F.3d 670, 672 (7th Cir. 2008). Because this case challenges an action that arose in Wisconsin and is not a type identified as nationally applicable, the Seventh Circuit is the appropriate circuit for review of the Administrator's decision.

The Order at issue in this case was signed July 23, 2012, and notice was published in the Federal Register on August 21, 2012. 77 Fed. Reg. 50,504 (Aug. 21, 2012). The petition for review was filed with this Court on October 17, 2012,

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which is within 60 days of publication of notice. Therefore, the Court has jurisdiction to hear this review pursuant to 42 U.S.C. §§ 7607 and 7661d(b)(2).

STANDING

On review of decisions on petitions to object to Clean Air Act permits, this Court requires petitioners to demonstrate standing as they would if moving for summary judgment. *Citizens Against Ruining the Env't*, 535 F.3d at 675. Petitioners here have standing.

An organization may sue on behalf of its members if (a) one or more of its members would have standing to sue in her own right, (b) neither the claims asserted nor the requested relief require proof of individualized damages, and therefore do not require the participation of individual members, and (c) the interests the organization seeks to protect are germane to its organizational purposes. Friends of the Earth v. Laidlaw Envtl. Servs., 528 U.S. 167, 180-81 (2000); Hunt v. Wash. State Apple Adver. Comm'n, 432 U.S. 333, 343 (1977); Bensman v. U.S. Forest Serv., 408 F.3d 945, 949 n.2 (7th Cir. 2005). Individuals have standing to sue in their own right if they have suffered a concrete and particularized injury that is fairly traceable to the defendant, and if the requested relief can provide meaningful redress of those injuries. *Laidlaw*, 528 U.S. at 180-81. Environmental plaintiffs "adequately allege injury in fact when they aver that they use the affected area and are persons 'for whom the aesthetic and recreational values of

the area will be lessened' by the challenged activity." *Id.* at 183; *see also Pollack v. U.S. Dept. of Justice*, 577 F.3d 736, 740 (7th Cir. 2009) (quoting *Laidlaw*).

Petitioners here have standing to challenge the EPA's failure to object to, and thereby correct, the Georgia Pacific mill's air pollution permit. First, Petitioners' individual members have standing in their own right because they have suffered legally cognizable injuries that are caused by the EPA's actions, and because their injuries will be redressed by a favorable decision by this Court. The EPA's decision challenged in this case directly harms Petitioners' members. Those members live, visit, work, and recreate in the area near and downwind from the Georgia Pacific mill to which the EPA's decision in this case directly relates. See Beverstein Dec. ¶¶ 4-6; Waterman Dec. ¶¶ 3-4; Seidl Dec. ¶¶ 3-4; Seiler Dec. ¶¶ 3-4; Mercier Dec. ¶¶ 3-4.¹ EPA's legal errors result in more air pollution in the Green Bay area than allowed by law. The challenged EPA Order therefore exposes Petitioners' members to harmful air pollution and the risk of serious health effects, including asthma, bronchitis, lung inflammation, chronic respiratory disease, cardiopulmonary disease and cardiovascular disease. See, *e.g.*, 71 Fed. Reg. 61,144, 61,151-52, 61,178-79 (Oct. 17, 2006) (identifying the health effects of particulate matter pollution); Beverstein Dec. ¶¶ 7-8; Waterman Dec. ¶¶ 5-8; Seidl Dec. ¶¶ 5-8; Seiler Dec. ¶¶ 5-8; Mercier Dec. ¶¶ 5-8. These

¹ Standing declarations appear in Addendum A.

injuries are cognizable aesthetic, recreational, and human health injuries for standing purposes. *See Laidlaw*, 528 U.S. at 183.

Additionally, Petitioners' injuries caused by EPA's unlawful order will be redressed by a decision vacating EPA's decision and ordering the agency to comply with the Clean Air Act on remand. *See Sierra Club v. Franklin County Power of Ill., LLC,* 546 F.3d 918, 927 (7th Cir. 2008) (finding requirement to obtain new permit would redress injuries); Mercier Dec. ¶ 8; Seiler Dec. ¶ 8; Beverstein Dec. ¶ 8.

Finally, the claims asserted by Petitioners here do not require the participation of individual members, and the interests asserted by Petitioners are germane to their purpose. Petitioners' core missions include combating excess pollution, including air pollution, and the resulting health and environmental harms, and advocating for stronger measures to protect and enhance air quality and public health. Hoegger Dec.; Saul Dec. Petitioners thus have standing under article III.

ISSUE PRESENTED FOR APPEAL

Do the Clean Air Act and its implementing regulations require that the sulfur dioxide and particulate matter air pollution emissions from the Georgia Pacific mill, which was "constructed" by undergoing a modification in 2004, consume the "increment" of allowed ambient air pollution?

STATEMENT OF THE CASE

This case seeks direct review of the EPA's decision to deny a petition filed by Petitioners Clean Water Action Council and Midwest Environmental Defense Center to object to a federal Clean Air Act permit that Wisconsin issued to the Georgia Pacific paper mill in Green Bay. 42 U.S.C. §§ 7661(b)(2), 7607(b)(1). The Clean Air Act, 42 U.S.C. §§ 7401-7671g ("Clean Air Act" or "the Act"), unambiguously requires the EPA to object when a state agency proposes a permit that fails to assure compliance with all applicable Clean Air Act requirements.

Petitioners identified errors in the permit that the State of Wisconsin had issued to Georgia-Pacific, but the Administrator denied the petition and allowed the permit to stand. One of those errors is at issue in this appeal: failing to consider the emissions from the mill (including its boilers) to consume the limited "increment" of air pollution. Wisconsin misinterpreted the Clean Air Act's requirement to count emissions from modified pollution sources against the "increment" of pollution. Because Wisconsin misapplied the Clean Air Act, and EPA did not reverse that error, EPA's decision violates the Act. This Court should reverse and remand the Administrator's Order.

STATEMENT OF FACTS

A. The Clean Air Act and Its Implementing Regulations.

The Clean Air Act was designed by Congress to protect and enhance the quality of the nation's air and, in doing so, promote the public health and welfare and the productive capacity of the United States' population. 42 U.S.C. § 7401(b)(1). The Act is Congress' attempt to "speed up, expand, and intensify the war against air pollution in the United States with a view to assuring that the air we breathe throughout the Nation is wholesome once again." H.R. Rep. No. 91-1146, at 1 (1970), reprinted in 1970 U.S.C.C.A.N. 5356; see also Wis. Elec. Power Co. v. Reilly, 893 F.2d 901, 909 (7thCir. 1990) (hereinafter "WEPCO"). The Act establishes regulatory programs, limits on pollution, permitting requirements, and other activities to achieve the goal of reducing pollution. Relevant to this appeal are the Prevention of Significant Deterioration ("PSD") program, 42 U.S.C. §§ 7470-7492, and the Title V operating permit program, 42 U.S.C. §§ 7661-7661f.

1. The Prevention of Significant Deterioration ("PSD") Program.

In 1970, the Clean Air Act was amended to authorize EPA to set minimum national ambient air quality standards, or NAAQS. Pub.L. No. 91-604, 84 Stat. 1676; 42 U.S.C. § 7409. The 1977 Amendments later increased the protection of air quality by adding the Prevention of Significant Deterioration program, which

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was intended to, among other purposes, prevent air quality from backsliding to the bare-minimum NAAQS. 42 U.S.C. § 7475; *see WEPCO*, 893 F.2d at 904-05.

The Prevention of Significant Deterioration program prevents the deterioration of air quality in areas that currently attain the NAAQS by requiring that the construction of any new facility, or modification of an existing facility, is only allowed if the facility's emissions do not violate caps on ambient air pollution called "increments." 42 U.S.C. § 7475(a)(3) (requiring that a facility's emissions "not cause, or contribute to, air pollution in excess of any... maximum allowable increase..."); New York v. E.P.A., 413 F.3d 3, 13 (D.C. Cir. 2005) ("sources must undergo ambient air quality analyses to show that they will [not] violate NAAQS increments..."); see also Order at 2 [JA __]. "Increments" are the "maximum allowable increase" of a particular pollutant "over the baseline concentration" of that pollutant. 42 U.S.C. § 7473; 40 C.F.R. § 51.166(c); Wis. Admin. Code § NR 405.09(2) (2004).² Different increments are set for "Class I" pristine areas, such as National Parks, for "Class II" typical areas, and for heavily polluted "Class III" areas. 40 C.F.R. § 51.166(c); 45 Fed. Reg. 52,676, 52,677 (Aug.

² The regulations in 40 C.F.R. § 51.166 contain the requirements that a state must meet through its own regulations for the EPA to approve the state's regulations as the "State Implementation Plan" or "SIP." The Wisconsin SIP was approved in May, 1999. 64 Fed. Reg. 28745 (May 27, 1999). It was later revised in 2008, effective as of January 16, 2009. 73 Fed. Reg. 76,560 (Dec. 17, 2008). However, the relevant version of the Wisconsin SIP in this case was the one in effect between 1999 and 2009, which is when the modification at issue occurred. *See General Motors Corp. v. United States*, 496 U.S. 530, 540 (1990) (the approved implementation plan is enforceable unless and until EPA approves a revision).

7, 1980). So, for example, the increments for sulfur oxides in the Green Bay "Class II" area are 20 micrograms per cubic meter (μ g/m³) annual average, 91 μ g/m³ 24-hour average, and 512 μ g/m³ 3-hour average. 40 C.F.R. § 51.166(c); Wis. Admin. Code § NR 404.05(3)(b).

The "baseline concentration," is the reference point from which increment is measured. It is not, however, an actual concentration of pollution that is measured in an area. Instead, it is a calculated number based on a formula prescribed by Congress. The calculation begins with the air concentration of a pollutant that existed at the time that the first Prevention of Significant Deterioration permit application is submitted for a source in the relevant area. 42 U.S.C. § 7479(4). But then, certain air pollution impacts are added and subtracted to determine the "baseline concentration" for a particular permitting action. First, emissions from facilities that had begun construction prior to January 6, 1975, but which had not actually operated (i.e., had not emitted air pollution) at the time the first application is submitted are included in the baseline concentration. *Id.* Second, and more relevant to this appeal, the sulfur oxide and particulate matter air pollution caused by any major emitting facility "on which construction commenced after January 6, 1975," do not count as being part of the baseline concentrations but, instead, have to compete for the prescribed "increment" of degradation above the baseline concentration. Id.

And, because Congress specifically defined "construction" to include modifications made to existing facilities, 42 U.S.C. § 7479(2)(C), this means that emissions from facilities that are modified after 1975 are excluded from the baseline and affect the increment.

To implement these increment caps, EPA promulgated nationwide regulations which Wisconsin then parroted in its own State Implementation Plan. States adopt State Implementation Plans ("SIPs") to meet the minimum requirements established by the EPA. 42 U.S.C. § 7410. One such requirement is to have a Prevention of Significant Deterioration program. 40 C.F.R. § 51.166(a)(1). States must generally adopt the definitions and other implementing regulations set out by EPA, or demonstrate that their state requirements are "at least as stringent, in all respects" as EPA's. 40 C.F.R. § 51.166(b). Once approved by EPA, the SIP is the operative law unless and until a modification to the SIP is approved. *General Motors Corp.*, 496 U.S. at 540; U.S. v. *Cinergy Corp.*, 623 F.3d 455, 458-59 (7thCir. 2010).

EPA and Wisconsin's implementing regulations prohibit facilities from emitting pollution that causes violations of the increments as measured from the "baseline concentration." 40 C.F.R. § 51.166(c); Wis. Admin. Code § NR 405.09(2). Consistent with the statutory definition, the "baseline concentration" in the implementing regulations is a calculated number, which explicitly

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excludes the "[a]ctual emissions... from any major stationary source on which construction commenced after the major source baseline date" and requires that such emissions consume the available increment. 40 C.F.R. § 51.166(b)(13)(ii)(a), (14)(i)(a); Wis. Admin. Code § NR 405.02(4)(b)1. Exclusion from the baseline means that emissions consume increment. 45 Fed. Reg. at 52,718 ("Increment consumption or expansion is directly related to baseline concentration. Any emissions not included in the baseline are counted against the increment."). Therefore, the "actual emissions" from any major source that is either initially constructed or modified after the "major source baseline date"³ are excluded from the baseline and consume increment. 40 C.F.R. § 51.166(b)(13)(ii)(a) (specifying that the "[a]ctual emissions, as defined in paragraph (b)(21)" are excluded from baseline and consume increment); Wis. Admin. Code § NR 405.02(4)(b)1.

The term "actual emissions," as used in the implementing regulations, is defined as three alternatives:

(a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the air contaminant during a 2-year period which precedes the particular date and which is representative of normal source operation....

³ The "major source baseline date" for purposes of the regulations, like the statute, is January 6, 1975, for sulfur oxides and particulate matter. 40 C.F.R. § 51.166(b)(14)(i); Wis. Admin. Code § NR 405.02(21m). Nitrogen oxides were added as a pollutant after the 1977 Amendments, so EPA established February 8, 1988, as the baseline date for nitrogen oxides. *Id.*

- (b) The department may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit unless reliable data are available which demonstrate that the actual emissions are different than the source-specific allowable emissions.
- (c) For any emission unit, other than an electric utility steam generating unit, which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit.

Wis. Admin. Code § NR 405.02(1)(a)-(c) (2004).⁴ Whichever alternative definition EPA and Wisconsin choose to apply to determine the "actual emissions," the regulation requires that those emissions be excluded from the baseline and consume increment.

2. The Title V Permitting Program and EPA Oversight.

With the 1990 Clean Air Act Amendments, Congress added an operating permit program, which mandates a permit for each major source of air pollution. Pub. L. 101-549, Title V (eff. Nov. 15, 1990) (codified at 42 U.S.C. §§ 7661 – 7661f). Because it was adopted as Title V of the 1990 Clean Air Act Amendments, the operating permit program is commonly referred to as the "Title V" program under the Act.

Important features of the operating permit program include a requirement that each permit "shall include enforceable emission limitations and standards... and such other conditions as are necessary to assure compliance" with the Act,

⁴ The definition includes a fourth option – for electric generating units only – in Wis. Admin. Code § NR 405.02(1)(d) (2004). However, because the Georgia Pacific mill does not constitute an electric generating unit, that definition is inapplicable here.

42 U.S.C. § 7661c(a), and that each permit "assure compliance by all sources... with each applicable standard, regulation, or requirement," *id.* 7661a(b)(5)(A). "Thus, the title V operating permits program is a vehicle for ensuring that air quality control requirements are appropriately applied to facility emission units and that compliance with these requirements is assured." Order at 2 [JA _]; see *also* 40 C.F.R. § 70.7(a)(1)(iv)) ("A permit . . . may be issued only if . . . [t]he conditions of the permit provide for compliance with all applicable requirements"). "Applicable requirements" in Title V permits include, inter alia, the requirement to comply with the prohibition on causing violations of the increments – the requirement at issue in this case. 42 U.S.C. § 7661c(a); 40 C.F.R. § 70.2 (defining "applicable requirement" to include rules promulgated under parts C and D of the Clean Air Act); N.Y. Pub. Interest Research Group, Inc. v. Johnson, 427 F.3d 172, 176 (2d Cir. 2005) ("This section also requires that the permit include all enforceable emission limitations and standards, such as prevention of significant deterioration ('PSD') limits."). Title V permits must be renewed every five years. 42 U.S.C. $\frac{5}{61a(b)(5)(B)}$.

The Title V program is implemented through EPA-approved state programs that meet the requirements of 40 C.F.R. pt. 70. Wisconsin's Title V program was granted interim approval by the EPA in 1995 and final approval effective November 30, 2001. 40 C.F.R. Pt. 70, Appx. A.

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Although the states have primary responsibility for implementing the Title V permit program, the EPA maintains oversight to ensure that every Title V permit complies with the Clean Air Act. The Act provides that before a state can issue a final Title V operating permit, the state must propose the permit to the EPA and allow the EPA 45 days to review the permit and object if the permit fails to meet the requirements for a Title V permit. 42 U.S.C. §§ 7661d(a)(1), (b)(1); 40 C.F.R. § 70.8. If any permit fails to ensure compliance with any applicable requirement of the Clean Air Act, the Administrator is required to object. 42 U.S.C. § 7661d(b); 40 C.F.R. § 70.8(c)(1); *see also* 40 C.F.R. § 70.7(a)(1)(iv)) ("A permit . . . may be issued only if . . . [t]he conditions of the permit provide for compliance with all applicable requirements").

If the EPA Administrator fails to object within her allotted 45 days, any person may petition the Administrator seeking an objection to the permit within the next 60 days. 42 U.S.C. § 7661d(b)(2). The Administrator is required to object to a permit if the petition demonstrates that the proposed permit does not comply with the Clean Air Act. *Id.* ("The Administrator *shall* issue an objection within such period if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of [the Clean Air Act]..." (emphasis added)); 40 C.F.R. § 70.8(c)(1); *Citizens Against Ruining the Env't*, 535 F.3d at 678. If the Administrator denies the petition requesting an objection, the petitioner may appeal that decision directly to the United States Court of Appeals for the appropriate circuit. 42 U.S.C. §§ 7661d(b)(2), 7607(b)(1). A court finding that a petitioner demonstrates that a permit does not comply with the Act may vacate the Administrator's decision denying the objection and remand the matter to EPA. *E.g., N.Y. Pub. Int. Research Group*, 427 F.3d 172.

B. The Georgia Pacific Mill Title V Permitting.

Georgia Pacific Consumer Products LP operates a paper mill that manufactures paper products such as toilet paper, napkins, and paper towels in Green Bay, Wisconsin. Order at 1 [JA __]; Pet. Ex V at p. 3 [JA __]. The mill is located on the shore of the Fox River in close proximity to residences. Pet. Ex V at p 3 [JA __]. The mill uses several coal-fired boilers to produce steam at its plant and also operates 12 paper machines. Order at 1; Petition Ex. V at 3 [JA __, __]. As a major source of air pollution, the mill is required to have and comply with a Title V air pollution operating permit issued by the Wisconsin Department of Natural Resources ("Wisconsin"), under the supervision of the EPA.

One of the paper machines in the mill, Paper Machine #9, was originally installed in 1971. Petition Ex. V at 4 [JA __]. However, in 2004, the mill made various physical and operational changes to Paper Machine 9 to increase its

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production from 61,000 to 110,960 tons of paper product per year, at a cost of approximately \$30,000,000.00. Pet. Ex. V at 4, 12 [JA __, _].

Wisconsin calculated the emissions increase from the mill resulting from the Paper Machine #9 project and found increases of more than 3,000 tons of particulates and 19,000 tons of sulfur oxides when the increased emissions from the "debottlenecked" boilers were included. Pet. Ex. V at 53 [JA __].⁵ Thus, Wisconsin concluded that the project constituted a "major modification," which in turn constitutes "construction" under the Act. 42 U.S.C. § 7479(2)(C) (defining construction to include modification); *see also* Wis. Admin. Code § NR 405.02(11) (same).

However, when determining that the mill would not cause violations of the cap on increment consumption, Wisconsin only counted *some* of the mill's emissions as consuming the increment. Specifically, Wisconsin counted only the increases in permitted maximum emission rates that have occurred at the mill over the years as consuming the increment; all other emissions from the mill were included in the baseline concentration. Wis. Resp. to Comments (Pet. Ex.

⁵ The emission increase from the boiler "debottlenecking" occurred because of the limited ability of the old Paper Machine #9 to use steam acted as a "bottleneck," preventing the boilers from producing steam at the boilers' full capacity. 71 Fed. Reg. 54,235, 54,238 (Sept. 14, 2006). The additional increase in emissions from the mill, compared to only the increase from Paper Machine #9, is due to the fact that the boilers at the mill would produce additional steam to power the additional paper-making capacity of the modified Paper Machine #9. Petition Ex. W [JA __].

C) at 8 [JA __]. For example, while Wisconsin determined that emissions from all the boilers at the mill would increase as a result of being debottlenecked as part of the 2004 paper machine project, Pet. Ex. V at p. 53 [JA __], it only considered the emissions from those boilers that were added to the facility after 1975 to consume increment but the other boilers' emissions to be in the baseline concentration . *Compare* Pet. Ex. V p. 44, Table 2 (increment consuming emissions for S10 and S11 representing the boilers units added after 1975) *to* p. 48 Table 2 (emission rates for S10 and S11, showing emissions from all boilers) [JA __, _].

Believing several aspects of Wisconsin's permitting of the Georgia Pacific mill to be wrong, Petitioners and others submitted public comments during the Title V permit renewal process. Pet. Ex. B [JA __]. As to the issue of increments, the comments noted that while the mill underwent a major modification in 2004, Wisconsin failed to follow Wis. Admin. Code § NR 405.02(4)(b)1., which required Wisconsin to exclude the mill's "actual emissions" of sulfur oxide and particulate matter from the baseline concentration and consider them to be increment consuming. Petition Ex. B at 4-7 [JA __].

In response to public comments, Wisconsin disagreed and stated:

[Clean Water Action Council] asserts that 'the actual emissions from the entire Georgia Pacific 'major stationary source' are to be excluded from the baseline and should be increment consuming because the plant 'commenced construction' when it underwent a major modification associated with 03-DCF-327 [the permit for the 2004 project].' The Department disagrees. The section of the code that [Clean Water Action Council] cites (s. NR 405.02(b)1., Wis. Admin. Code) relates to the <u>initial</u> construction of a major PSD source. Essentially, any major PSD source that initially constructs after the major-source baseline date will always consume increment. But, since Georgia-Pacific Broadway Mill existed prior to both the major-source and minor-source baseline dates, the provisions of NR 405.025 and the guidance documents from USEPA and WDNR apply. That is, only the emission <u>increases</u> and <u>decreases</u> at the plant that occur after the major source baseline date affect increment.

Wis. Resp. to Comments (Petition Ex. C) at 7 (emphasis original) [JA __].

In other words, Wisconsin interpreted Wis. Admin. Code § NR 405.02(4)(b)1.

to mean only increases and decreases in emissions after the major source baseline

date (January 6, 1975) would affect the available increment. Therefore,

Wisconsin concluded, even though the mill commenced construction after the

major source baseline date by undergoing a major modification in 2004, no

increment was consumed because the maximum permitted hourly emissions did

not increase from 1975 rates as a result of the project.

C. The Petition to EPA and the EPA's Response.

On July 23, 2011, Clean Water Action Council and Midwest Environmental Defense Center petitioned the EPA Administrator pursuant to 42 U.S.C. § 7661d(b)(2). *See* Pet. [JA __]. In that Petition, Petitioners asked EPA to object to the mill's permit because (among other reasons not at issue in this appeal), the permit failed to ensure that the emissions from the mill do not violate the applicable increments. Pet. at 52-64 [JA__]. The Petition noted that the 2004 project at the mill constitutes "commencing construction" because it was a major modification based on Wisconsin's determination that there would be an increase in emissions. Pet. at 55 [JA __]. The Petition further noted that while the applicable regulations require Wisconsin to exclude the mill's "actual emissions" from the baseline concentration and consider them increment consuming as a result of the 2004 project, Wis. Admin. Code § NR 405.02(4)(b)1., Wisconsin failed to do so because it incorrectly believed that only increases in the maximum permitted emission rates consume the increment. Pet. at 58-59 [JA __].

The EPA's resulting Order held that "Petitioners have not demonstrated that WDNR had reliable evidence that the actual emissions from the boilers on the applicable baseline date differed from the source['s] allowable emissions as of that date." Order at 16 [JA __]. EPA asserted that "[u]nder the PSD program, increment is consumed if a major modification results in *an increase* in emissions from the baseline concentration for the relevant pollutant." Order at 17 (emphasis added) [JA __]. Because the Georgia Pacific mill "underwent a modification in 2004, any *increases* in actual emissions from the major source baseline date that resulted from the 2004 modification would be considered increment-consuming." Order at 18 (emphasis added) (citing *In re Northern*

Michigan Univ., 14 E.A.D. __, PSD Appeal No. 08-02, Slip Op. at 46 (EAB, Feb. 18, 2009)) [JA __]; *see also id.* at 20 ("An increment analysis considers... increases from construction at a major source that commences after the major source baseline date[.]") [JA __]. In other words, EPA agreed with Wisconsin that Wis. Admin. Code § NR 405.02(4)(b)1. states that only *increases* in emissions resulting from "construction" after 1975 consume increment.

Disagreeing with the EPA's analysis, Petitioners filed this action to obtain review of portions of Section III of the Order. Order at 14-21 [JA __]. Other sections of the Order are not at issue in this Appeal.⁶

SUMMARY OF THE ARGUMENT

EPA misapplied the Clean Air Act and implementing regulations when it denied Petitioners' petition to object. EPA's conclusion that increment is only consumed by the increase in emissions since 1975, rather than by excluding the emissions from air pollution sources that were modified since 1975 conflicts with the language of the Act and the regulations. The plain language of both provide that the *total facility emissions*, as opposed to only the *increase* in emissions, from any facility constructed (which, as here, includes modifications) after the relevant baseline date count against the increment. Since the Georgia Pacific mill's 2004

⁶ Other issues related to the Georgia Pacific permit remain pending before the state agency in a contested case hearing pursuant to Wis. Stat. § 285.81, which provides for discovery and witness testimony. Wis. Admin. Code §§ NR 2.07, 2.09, 2.10-2.13, 2.14-2.155.

modification constitutes "construction" after the major source baseline date for sulfur oxides and particulate matter, the entire facility's actual emissions should have consumed increment for purposes when it sought a Title V renewal permit.

Petitioners have demonstrated that the Georgia Pacific permit does not comply with the Clean Air Act, and the Administrator's Order denying the petition should be vacated and remanded.

ARGUMENT

I. Standard of Review

The Court reviews EPA's decision not to object to a permit pursuant to 42 U.S.C. § 7661d(b) under the Administrative Procedure Act, determining whether the decision was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); *Citizens Against Ruining the Env't*, 535 F.3d at 674.

The Court reviews interpretations of law *de novo*. *United States v. Thornton*, 539 F.3d 741, 742 (7th Cir. 2008). However, interpretations of statutes by agencies are reviewed by the courts through the familiar *Chevron* standard. *Chevron U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837, 842-43 (1984). Under the first step of *Chevron*, courts must to "give[] effect" to congressional intent discerned using "traditional tools of statutory construction." *Id.* at 843 n.9. When congressional intent "is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Id.* at 842-43.

Where Congress has failed to makes its intent clear, *Chevron* step two provides for judicial deference. That is, there must be "enough play in the statutory joints to allow [the agency] to impose its own 'interpretation' under the aegis of *Chevron.*" *Krzalic v. Republic Title Co.*, 314 F.3d 875, 881 (7th Cir. 2002). Even then, the courts only defer to reasonable agency interpretations of the statute. *Id.* at 845.

> To be sure, this standard does not give the EPA unbridled discretion to construe the Clean Air Act Amendments free from judicial oversight. [The Court] must consider whether the EPA's construction comports with its statutory mandate and Congress' intent in enacting clean air legislation.

WEPCO, 893 F.2d at 907.

A similar two-step for deference applies for regulations. Only when a

regulation is ambiguous does the Court look to the agency's interpretation.

In discerning intent, courts traditionally focus on the language of statutes and regulations because we presume that legislatures and agencies mean what they say; most of the time, the "plain language" of a statute or regulation will be the best indicator of the enacting body's will... only when the text is silent or ambiguous will we defer to an administrative agency's interpretation.

Marlowe v. Bottarelli, 938 F.2d 807, 812 (7th Cir. 1991) (internal citations omitted).

II. The Plain Language of the Clean Air Act and Its Implementing Regulations Provide That a Source's "Actual Emissions," And Not Merely Increases In Permitted Emission Rates, Are Excluded From the Baseline And Consume Increment.

When it reviewed Georgia Pacific's Title V renewal application, Wisconsin failed to consider source-wide actual emissions from the Georgia Pacific mill as consuming increment – despite the fact that the mill "commenced construction" by undergoing a major modification in 2004. EPA's Order determined that the State's interpretation was appropriate because, EPA asserts, only *increases* in actual emissions since the major source baseline date from modified facilities consume increment. Order at 18 [JA _]. Tellingly, EPA's discussion of this issue in the Order did not mention the statute, 42 U.S.C. § 7479(4), or the implementing regulation, Wis. Admin. Code § NR 405.02(4)(a)1., both of which say that Wisconsin was to exclude the "emissions," or "actual emissions," when calculating the baseline and increment consumption. The statute and regulation do not say that only the increases since the baseline date count against the increment. The Clean Air Act's own language dictates the results of this case, and requires Wisconsin and EPA to exclude all of Georgia Pacific's emissions from the baseline and count them as consuming the increment. Georgia Pacific's permit, as issued, violates the Clean Air Act and the Administrator should have objected to it. This Court should reverse EPA.

A. The Plain Language of the Clean Air Act Requires That All Emissions From A Modified Facility Consume Increment.

1. EPA's Interpretation Contradicts the Act's Plain Statutory Language.

The first step in interpreting a statute "is to determine whether the language is plain and unambiguous... with regard to the particular dispute in the case," and if so to apply that language. *Robinson v. Shell Oil Co.*, 519 U.S. 337, 340 (1997). Where the statute is silent or ambiguous, an agency's interpretation must be a permissible one. *Chevron*, 467 U.S. at 843. Here, the statute is plain and contradicts EPA's interpretation and decision in this case.

Congress defined the baseline concentration as a calculation. Beginning with the air pollution concentration at the time of the first permit application, air pollution impacts from facilities that were being constructed but had not yet operated as of January 6, 1975, are included in the baseline, but "[e]missions of sulfur oxides and particulate from any major emitting facility on which construction commenced after January 6, 1975, shall not be included in the baseline and shall be counted against the maximum allowable increases in pollutant concentrations established under this part." 42 U.S.C. § 7479(4). Since Congress defined "construction" to include both the initial creation of a pollution source and the modification of any existing source, 42 U.S.C. §§ 7411(a), 7479(2)(C), this means that the "emissions from" any source modified after January 6, 1975, are excluded from the baseline concentration and count against the increment.

Contrary to this statutory language, EPA's Order concludes that only increases in permitted emission rates at Georgia Pacific since January 6, 1975, count against the increment. Order at 18 [JA __]. That interpretation cannot be squared with the statute. In fact, the Court would have to read words into the statute that were not included by Congress to get to EPA's interpretation. *Water Quality Assoc. Employees' Benefit Corp. v. U.S.*, 795 F.2d 1303, 1309 (7th Cir. 1986) (holding that neither courts nor administrative agencies can read words into a statute). As written, the statute excludes "the emissions from" a facility – not the amount of permitted emission increases-- from the baseline and designations those emissions as consuming the increment. 42 U.S.C. § 7479(4).

EPA's Order does not discuss the statutory language. Instead, the only basis for reading the word "increases" into the statute is its own prior interpretation in a case called *In re Northern Michigan University*. *See* Order at 18 (*citing In Northern Michigan University*, 14 E.A.D. __, Slip Op. at 46 (EAB 2009)).⁷ But EPA's echo chamber of its own prior interpretation is not the same as addressing the actual language of 42 U.S.C. § 7479(4). Moreover, its prior interpretation conflicts with

⁷ This interpretation was offered by the Environmental Appeals Board, an administrative tribunal within EPA authorized to review and issue final agency decisions on appeals of certain permits. 40 C.F.R. § 124.2(a). A copy of the decision is located at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/203899b9359b790a8525706c004d1a3a/06d bec31ebfd8c3e852575620052318b!OpenDocument

the plain language of the statute. *Chevron*, 467 U.S. at 843 n.9 (if statutory language is clear, that language "is the law and must be given effect"); *Illinois EPA v. EPA*, 947 F.2d 283, 289 (7th Cir. 1991); *cf. U.S. v. Cinergy Corp.*, 623 F.3d 455, 458 (7th Cir. 2010) (rejecting EPA's interpretation that conflicted with what the "straightforward reading" of the regulation stated). EPA cannot bootstrap a current incorrect interpretation solely by relying on a prior incorrect interpretation.

The plain language of 42 U.S.C. § 7479(4) required that all actual emissions of particulate matter and sulfur oxides from Georgia Pacific be counted against increment, and because it fails to do so, the facility's permit violates the Clean Air Act.

2. Congressional History Cited by EPA Does Not Support the Agency's Interpretation of the Act.

As noted above, the EPA's Order cites its prior decision in the *Northern Michigan University* case as the sole support for the assertion that "it is reasonable to construe statutory, regulatory, and preamble language to mean that only emissions specifically tied back to a modification be considered incrementconsuming, as opposed to all emissions from modified sources." Order at 18 (citing *Northern Michigan*, Slip Op. at 46) [JA __]. But the *Northern Michigan* decision itself ignores the statute and relies on a faulty analysis of legislative history to reach an interpretation that conflicts with the language actually adopted by Congress.

The *Northern Michigan* decision was also based on a mistaken interpretation of congressional history – specifically, on the testimony from one lobbyist who failed to convince Congress to amend the relevant language and on a vague committee report. *Northern Michigan University*, Slip. Op. at 41-42 (quoting subcommittee testimony and report). Testimony of a lobbyist before a subcommittee is hardly indicative of the intent of the majority in Congress who adopted 42 U.S.C. § 7479(4). But even if it were, the EPA is wrong that such testimony supports EPA's interpretation. If anything, it supports Petitioners here.

The testimony that EPA relies on complained that the bill language would require all of the actual emissions from a new boiler added to a plant to consume increment, even when off-set by greater reductions by retiring another boiler at the same time. *Northern Michigan*, Slip. Op. at 41-42. That is, it complained that by modifying a plant, all of the plant's emissions would consume the increment, instead of only the amount of any emission increase consuming increment. However, despite this protestation, Congress adopted the language the lobbyist was complaining about. 42 U.S.C. § 7479(4). As even the *Northern Michigan* decision acknowledges, "Congress did not alter the statutory language in
response to industry's pleas." *Id.* at 42. In other words, EPA attempts to give effect to the desires of an unsuccessful lobbyist, rather than to the language Congress actually adopted.

By failing to change the bill language, Congress enacted the exact language that the hearing testimony complained would require all of the emissions and not the increase in emissions to consume increment. If anything, this confirms that 42 U.S.C. § 7479(4) does not state that only the increase in emissions consume the increment. *Cf. Am. Hosp. Assoc. v. NLRB*, 899 F.2d 651, 658 (7th Cir. 1990) (cautioning that where industry urged amendment but failed to achieve it, courts should not read legislative history to achieve an amendment that was not made to the legislation). Thus, where the question is whether emissions from the Georgia Pacific mill that commenced construction after 1975 by undergoing a modification in 2004 consume increment, this Congressional history of the statute actually adopted answers in the affirmative.

The only other apparent basis for EPA's attempt to read the word "increases" into the statute is a Senate committee report referenced in the *Northern Michigan* decision. *Northern Michigan*, Slip Op. at 43 (quoting S. Rep. No. 95-127, at 97 (1977)). At the outset, this Court has recently noted that "[i]nferring collective [Congressional] intent" from committee reports "is often a hazardous enterprise." *Jeroski v. Fed. Mine Safety & Health Review Comm'n*, 697 F.3d 651, 655

(7th Cir. 2012). "One never knows how many legislators read committee reports, or if they do whether they agree with them or just with the statutory text." *Id*.

In any case, the committee report relied on here has questionable value under the facts presented. The Senate Committee on Environment and Public Works report states that in instances of "facilities built as replacements for sources in existence before January 6, 1975" only those emissions "in excess of those from the source replaced" consume increment. Northern Michigan, Slip Op. at 43 (quoting S. Rep. No. 95-127, at 97 (1977)). However, there is no replacement unit at issue in this case at the Georgia Pacific mill. Since projects that do not increase emissions do not constitute "construction" within the meaning of 42 U.S.C. § 7479(4), it is not clear what concept the phrase "[emissions] in excess of those from the source replaced" in the Senate Report refers to. It could mean that increment consumption only applies in 42 U.S.C. § 7479(4) when there is "construction," which only occurs when emissions increase. See e.g., 42 U.S.C. §§ 7479(2)(C) (construction includes modification as defined in 42 U.S.C. § 7411(a)), 7411(a) (a modification that increases emissions). The report does not address a clear situation where there is "construction" after the 1975 baseline date, nor does it state that only the increase since the baseline date are excluded from the baseline concentration and consume increment, as EPA now urges.

More importantly, even if the Committee Report said exactly what EPA wants it to say – that only the increases in permitted emission rates occurring after 1975 are excluded from the baseline and consume increment – the report would still be irrelevant because the statute controls, not the report. "The basic rule of statutory interpretation is that plain statutory language governs," and resort to congressional committee reports is unnecessary absent ambiguity or conflict between statutes. *Silvernail v. Ameritech Pension Plan*, 439 F.3d 355, 358 (7th Cir. 2006) (quoting Nestle Holdings Inc. v. Cent. States, S.E. & S.W. Areas Pension Fund, 342 F.3d 801, 804 (7th Cir. 2003)); Kramer v. Banc of America Sec., LLC, 355 F.3d 961, 966 (7th Cir. 2004). Put another way, "Congress enacts and the President signs statutes rather than committee reports." Benion v. Bank One, N.A., 144 F.3d 1056, 1059 (7th Cir. 1998); see also Sunstrand Corp. v. Comm'r of Internal Revenue, 17 F.3d 965, 967 (7th Cir. 1994) ("The term 'legislative history' picks up some peculiarly unreliable 'historical' guides to meaning... a passage in a committee report that may have been inserted by a lobbyist or a committee staff member and not scrutinized carefully by other members of the committee."); *Matter of Sinclair*, 870 F.2d 1340, 1343 (7th Cir. 1989) (holding that reliance on legislative history for the basis of interpreting a statute is unreliable "because it is often a loser's history[,]... becomes a crutch... [and] complicates the task of execution and obedience..."); Covalt v. Carey Canada, Inc., 860 F.2d 1434, 1438 (7th Cir. 1988)

("Even the contemporaneous committee reports may be the work of those who could not get their thoughts into the text of the bill."). Regardless of any historical records, 42 U.S.C. § 7479(4) simply does not say that the increase in allowable emissions since 1975 affect the increment. It can only be interpreted as saying that if the words used are ignored and other words are inserted.

Because EPA's Order relies on an interpretation of 42 U.S.C. § 7479(4) that is inconsistent with the language of the statute, and seeks to add words that Congress never adopted, EPA's Order is unlawful and must be remanded.

B. The Wisconsin Implementation Plan Also Provides That The "Actual Emissions" From Facilities That "Commence Construction" After The Major Source Baseline Date Affect the Increment and Not the Increase In Emissions.

Not only does EPA's interpretation conflict with the Clean Air Act, it also conflicts with the plain language of the Wisconsin implementation plan. EPA interpreted the plan as excluding only the increase in emissions occurring since 1975 as affecting the increment. Order at 18 [JA __]. But that is not what the implementation plan says. Again, EPA's order did not even attempt to address the actual language in the regulation.

The Wisconsin implementation plan provides that for purposes of determining compliance with the increments, the "baseline concentration" excludes "[a]ctual emissions from any major stationary source on which construction commenced after the major source baseline date^{"8} and that such emissions "will affect the applicable maximum allowable increase." Wis. Admin. Code § NR 405.02(4)(b)1. Regardless of which definition of "actual emissions" is applied, NR 405.02(4)(b) provides that those emissions "will not be included in the baseline concentration and will affect the applicable maximum allowable increase." The regulation does not say only increases in actual emissions are excluded from the baseline and affect increment — it says the actual emissions are excluded and affect increment. While EPA has considerable discretion in interpreting its own regulations (and presumably, state regulations that parrot EPA's), that discretion is not absolute and does not excuse interpretations at odds with a regulation's plain terms. *Cf. WEPCO*, 893 F.2d at 917 (noting discretion to EPA but nevertheless rejecting EPA's interpretation).

Another provision, NR 405.02(4)(b)2., specifically refers to increases and decreases. However, that provision provides that increases from any source (not just major sources and not just those that are "constructed" within the meaning of the PSD program) consume increment. Wis. Admin. Code § NR 405.02(4)(b)2. ("increases and decreases at any source occurring after the minor source baseline date" are excluded from the baseline concentration and consume increment).

⁸ The major source baseline date for sulfur oxides and particulates is January 6, 1975, just as in the Clean Air Act. *Compare* Wis. Admin. Code § NR 405.02(21m)(a) *with* 42 U.S.C. § 7479(4).

That section applies in addition to NR 405.02(4)(b)1. to define another category of emissions that consume increment.⁹ However, that subsection is not at issue here because there is no dispute that the 2004 project at the mill constituted "construction" within the meaning of Wis. Admin. Code § NR 405.02(4)(b)1.

But, the second subsection, NR 405.02(4)(b)2., is relevant here because it highlights that when the regulations mean "increases" in emissions to consume increment, they say so explicitly. The fact that one subsection specifies "increases," Wis. Admin. Code § NR 405.02(4)(b)2., while the other specifies "actual emissions," requires that those two phrases be given different meanings. *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) ("'Where Congress includes particular language in one section of a statute but omits it in another . . . it is

 $^{^{9}}$ The full definition of "baseline concentration" in Wis. Admin. Code § NR 405.02(4) is as follows:

[&]quot;Baseline concentration" means that ambient concentration level which exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each air contaminant for which a minor source baseline date is established and shall include:

^{1.} The actual emissions representative of sources in existence on the

applicable minor source baseline date, except as provided in par. (b).

^{2.} The allowable emissions of major stationary sources which commenced construction before the major source baseline date, but were not in operation by the applicable minor source baseline date.

⁽b) The following will not be included in the baseline concentration and will affect the applicable maximum allowable increases:

^{1.} Actual emissions from any major stationary source on which construction commenced after the major source baseline date.

^{2.} Actual emissions increases and decreases at any stationary source occurring after the minor source baseline date.

generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.'") (quoting *Russello v. United States*, 464 U.S. 16, 23, 78 L. Ed. 2d 17, 104 S. Ct. 296 (1983)); *Bloch v. Fischholz*, 587 F.3d 771, 782 (7th Cir. 2009) ("when the legislature uses certain language in one part of the statute and different language in another, the court assumes different meanings were intended." (internal quote omitted)); *see also* 2A Norman J. Singer & J.D. Shambie Singer, *Sutherland Statutes and Statutory Construction* § 46.6 p. 251-52 (7th ed. 2007) ("where the legislature has employed a term in one place and excluded it in another, it should not be implied where excluded. The use of different terms within similar statutes generally implies that different meanings were intended.").

Here, even though the Georgia Pacific mill underwent a physical and operational change as part of the 2004 project – and therefore commenced construction, Wis. Admin. Code § NR 405.02(11) – Wisconsin and EPA failed to exclude all of the mill's "actual emissions" from the baseline concentration and consider them to be increment consuming as required by Wis. Admin. Code § NR 405.02(4)(b)1. Instead, Wisconsin and EPA ignored the phrase "actual emissions" in § NR 405.02(4)(b)1. and pretended that the phrase "increases in emissions since the major source baseline date" appears there instead. EPA's order is based on an interpretation of Wis. Admin. Code § NR 405.02(4)(b)1. that conflicts with the actual words used in the regulation. EPA's attempt to read words into the regulation that were intentionally omitted (while used elsewhere in the same code section), is unlawful. EPA's decision must be remanded.

C. EPA's Interpretation Conflicts with the Clean Air Act's Intent to Eventually Place Existing Sources on Level Ground with New Sources When They are Modified.

Finally, in addition to conflicting with the plain language of the controlling statute and the regulation, EPA's interpretation of the PSD program's increment provisions would undermine Congress' intent to eventually subject all sources existing prior to 1975 to the same pollution control requirements that new sources must meet. Whether intended or not, EPA's interpretation would provide a barrier to new industry locating in an area that would not apply to an existing source rebuilding its facility.

In the Clean Air Act, Congress chose not to immediately subject existing facilities to the PSD program because it recognized that "building control technology into new plants at the time of construction will plainly be less costly then [sic] requiring retrofit when pollution ceilings are reached." *WEPCO*, 893 F.2d at 909 (quoting H.R.Rep. No. 294, 95th Cong., 1st Sess. 185, reprinted in 1977 U.S.Code Cong. & Admin. News at 1264). However, "Congress did not permanently exempt existing plants from these requirements,... exiting plants that have been modified are subject" to the program just as new plants are. *Id*. Otherwise, "operators could, without exposure to the standards of the 1977 Amendments, increase production (and pollution) through the extensive replacement of deteriorated generating systems." *Id*. at 910 (parenthetical original).

EPA's interpretation of the Act and implementing regulations in its Order below would allow existing facilities to modify, or even rebuild an entire plant, without having to compete with new sources for the limited available increment as long as the modified facility did not increase maximum permitted emission rates compared to 1975. Such an option is obviously not available to new entrants to the market – including those who would pollute less – because they would necessarily be increasing pollution from their (non-existent) 1975 levels. This would "open vistas of indefinite immunity from the provisions of... PSD" relating to increment consumption for existing facilities. WEPCO, 893 F.2d at 909 (rejecting an interpretation of "physical change" because such a definition would postpone application of PSD requirements to existing sources "into the indefinite future"). Existing facilities under EPA's interpretation would have a free pass to pollute up to their 1975 permitted levels without ever having to compete for the limited increments that all new facilities must compete for.

This Court has appropriately rejected interpretations of Clean Air Act PSD program elements that would similarly "distort the choice between rebuilding an old plant and replacing it with a new one." *Cinergy*, 623 F.3d at 457. Especially because there is no basis for EPA's interpretation of 42 U.S.C. § 7479(4) and Wis. Admin. Code § NR 405.02(4)(b)1. in the statute or regulation, and because it would distort the market in favor of older plants and against new ones, the Court should similarly reject EPA's interpretation in this case.

CONCLUSION

There is no basis in the statute or implementing regulations for EPA's interpretation that only increases in permitted emission rates since 1975 consume the increment caps for sulfur dioxide and particulate matter emissions. The Georgia Pacific mill was "constructed," by modifying its facility in 2004, and therefore its actual emissions consume the increment. EPA's refusal to object to the permit based on its erroneous interpretation of law should be reversed and remanded to the EPA.

February 11, 2013.

Respectfully submitted,

By: s/ David C. Bender

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CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 28.1(e)(3) and 32(a)(7)(C), I hereby certify that this brief conforms to the type-volume limitations of Fed. R. App. P. 28.1(e)(2)(B) and the type face requirements of Circuit Rule 32(b). This brief is produced with a proportionally spaced typeface using Microsoft Office Word 2007 in 13-point Book Antiqua font in the body and 11-point font in the footnotes. The length of this brief is 8,597 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

Dated: February 11, 2013.

<u>s/ David C. Bender</u> David C. Bender Counsel for Petitioners

CERTIFICATE OF SERVICE

Pursuant to Fed. R. App. P. 25(d), I hereby certify that on February 11, 2013, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Seventh Circuit by using the CM/ECF system. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

Dated: February 11, 2013.

<u>s/ David C. Bender</u> David C. Bender

Counsel for Petitioners, Clean Water Action Council of Northeastern Wisconsin, Inc., and Midwest Environmental Defense Center, Inc.

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after the date of promulgation. Within 21 months after such date of promulgation such plan revision shall be submitted to the Administrator who shall approve or disapprove the plan within 25 months after such date or 1 promulgation in the same manner as required under section 7410 of this title.

(c) Contents of regulations

Such regulations shall provide specific numerical measures against which permit applications may be evaluated, a framework for stimulating improved control technology, protection of air quality values, and fulfill the goals and purposes set forth in section 7401 and section 7470 of this title.

(d) Specific measures to fulfill goals and purposes

The regulations of the Administrator under subsection (a) of this section shall provide specific measures at least as effective as the increments established in section 7473 of this title to fulfill such goals and purposes, and may contain air quality increments, emission density requirements, or other measures.

(e) Area classification plan not required

With respect to any air pollutant for which a national ambient air quality standard is established other than sulfur oxides or particulate matter, an area classification plan shall not be required under this section if the implementation plan adopted by the State and submitted for the Administrator's approval or promulgated by the Administrator under section 7410(c) of this title contains other provisions which when considered as a whole, the Administrator finds will carry out the purposes in section 7470 of this title at least as effectively as an area classification plan for such pollutant. Such other provisions referred to in the preceding sentence need not require the establishment of maximum allowable increases with respect to such pollutant for any area to which this section applies.

(f) PM-10 increments

The Administrator is authorized to substitute, for the maximum allowable increases in particulate matter specified in section 7473(b) of this title and section 7475(d)(2)(C)(iv) of this title, maximum allowable increases in particulate matter with an aerodynamic diameter smaller than or equal to 10 micrometers. Such substituted maximum allowable increases shall be of equal stringency in effect as those specified in the provisions for which they are substituted. Until the Administrator promulgates regulations under the authority of this subsection, the current maximum allowable increases in concentrations of particulate matter shall remain in effect.

(July 14, 1955, ch. 360, title I, §166, as added Pub. L. 95–95, title I, §127(a), Aug. 7, 1977, 91 Stat. 739; amended Pub. L. 101–549, title I, §105(b), Nov. 15, 1990, 104 Stat. 2462.)

Amendments

1990-Subsec. (f). Pub. L. 101-549 added subsec. (f).

§7477. Enforcement

The Administrator shall, and a State may, take such measures, including issuance of an order, or seeking injunctive relief, as necessary to prevent the construction or modification of a major emitting facility which does not conform to the requirements of this part, or which is proposed to be constructed in any area designated pursuant to section 7407(d) of this title as attainment or unclassifiable and which is not subject to an implementation plan which meets the requirements of this part.

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(July 14, 1955, ch. 360, title I, §167, as added Pub. L. 95–95, title I, §127(a), Aug. 7, 1977, 91 Stat. 740; amended Pub. L. 101–549, title I, §110(3), title VII, §708, Nov. 15, 1990, 104 Stat. 2470, 2684.)

AMENDMENTS

1990—Pub. L. 101-549, §708, substituted "construction or modification of a major emitting facility" for "construction of a major emitting facility".

Pub. L. 101-549, 10(3), substituted "designated pursuant to section 7407(d) as attainment or unclassifiable" for "included in the list promulgated pursuant to paragraph (1)(D) or (E) of subsection (d) of section 7407 of this title".

§7478. Period before plan approval

(a) Existing regulations to remain in effect

Until such time as an applicable implementation plan is in effect for any area, which plan meets the requirements of this part to prevent significant deterioration of air quality with respect to any air pollutant, applicable regulations under this chapter prior to August 7, 1977, shall remain in effect to prevent significant deterioration of air quality in any such area for any such pollutant except as otherwise provided in subsection (b) of this section.

(b) Regulations deemed amended; construction commenced after June 1, 1975

If any regulation in effect prior to August 7, 1977, to prevent significant deterioration of air quality would be inconsistent with the requirements of section 7472(a), section 7473(b) or section 7474(a) of this title, then such regulations shall be deemed amended so as to conform with such requirements. In the case of a facility on which construction was commenced (in accordance with the definition of "commenced" in section 7479(2) of this title) after June 1, 1975, and prior to August 7, 1977, the review and permitting of such facility shall be in accordance with the regulations for the prevention of significant deterioration in effect prior to August 7, 1977.

(July 14, 1955, ch. 360, title I, §168, as added Pub. L. 95-95, title I, §127(a), Aug. 7, 1977, 91 Stat. 740; amended Pub. L. 95-190, §14(a)(52), Nov. 16, 1977, 91 Stat. 1402.)

Amendments

1977—Subsec. (b). Pub. L. 95–190 substituted "(in accordance with the definition of 'commenced' in section 7479(2) of this title)" for "in accordance with this definition".

§7479. Definitions

For purposes of this part—

(1) The term "major emitting facility" means any of the following stationary sources

¹So in original. Probably should be "of".

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of air pollutants which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant from the following types of stationary sources: fossil-fuel fired steam electric plants of more than two hundred and fifty million British thermal units per hour heat input, coal cleaning plants (thermal dryers), kraft pulp mills, Portland Cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than fifty tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production facilities, chemical process plants, fossil-fuel boilers of more than two hundred and fifty million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding three hundred thousand barrels, taconite ore processing facilities, glass fiber processing plants, charcoal production facilities. Such term also includes any other source with the potential to emit two hundred and fifty tons per year or more of any air pollutant. This term shall not include new or modified facilities which are nonprofit health or education institutions which have been exempted by the State.

(2)(A) The term "commenced" as applied to construction of a major emitting facility means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations and either has (i) begun, or caused to begin, a continuous program of physical onsite construction of the facility or (ii) entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed within a reasonable time.

(B) The term "necessary preconstruction approvals or permits" means those permits or approvals, required by the permitting authority as a precondition to undertaking any activity under clauses (i) or (ii) of subparagraph (A) of this paragraph.

(C) The term "construction" when used in connection with any source or facility, includes the modification (as defined in section 7411(a) of this title) of any source or facility.

(3) The term "best available control technology" means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter 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. In no event shall application of "best available control technology" result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 7411 or 7412 of this title. Emissions from any source utilizing clean fuels, or any other means, to comply with this paragraph shall not be allowed to increase above levels that would have been required under this paragraph as it existed prior to November 15, 1990.

(4) The term "baseline concentration" means, with respect to a pollutant, the ambient concentration levels which exist at the time of the first application for a permit in an area subject to this part, based on air quality data available in the Environmental Protection Agency or a State air pollution control agency and on such monitoring data as the permit applicant is required to submit. Such ambient concentration levels shall take into account all projected emissions in, or which may affect, such area from any major emitting facility on which construction commenced prior to January 6, 1975, but which has not begun operation by the date of the baseline air quality concentration determination. Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall not be included in the baseline and shall be counted against the maximum allowable increases in pollutant concentrations established under this part.

(July 14, 1955, ch. 360, title I, §169, as added Pub. L. 95–95, title I, §127(a), Aug. 7, 1977, 91 Stat. 740; amended Pub. L. 95–190, §14(a)(54), Nov. 16, 1977, 91 Stat. 1402; Pub. L. 101–549, title III, §305(b), title IV, §403(d), Nov. 15, 1990, 104 Stat. 2583, 2631.)

Amendments

1990—Par. (1). Pub. L. 101–549, 305(b), struck out "two hundred and" after "municipal incinerators capable of charging more than".

Par. (3). Pub. L. 101-549, §403(d), directed the insertion of ", clean fuels," after "including fuel cleaning,", which was executed by making the insertion after "including fuel cleaning" to reflect the probable intent of Congress, and inserted at end "Emissions from any source utilizing clean fuels, or any other means, to comply with this paragraph shall not be allowed to increase above levels that would have been required under this paragraph as it existed prior to November 15, 1990."

1977—Par. (2)(C). Pub. L. 95–190 added subpar. (C).

STUDY OF MAJOR EMITTING FACILITIES WITH POTENTIAL OF EMITTING 250 TONS PER YEAR

Section 127(b) of Pub. L. 95–95 directed Administrator, within 1 year after Aug. 7, 1977, to report to Congress on consequences of that portion of definition of "major emitting facility" under this subpart which applies to facilities with potential to emit 250 tons per year or more.

SUBPART II—VISIBILITY PROTECTION

CODIFICATION

As originally enacted, subpart II of part C of subchapter I of this chapter was added following section 7478 of this title. Pub. L. 95-190, §14(a)(53), Nov. 16, 1977, Page Case: 12-3388 TITLE 42 THE PUBLIC HEALTH AND WELFARE

(e) Temporary sources

The permitting authority may issue a single permit authorizing emissions from similar operations at multiple temporary locations. No such permit shall be issued unless it includes conditions that will assure compliance with all the requirements of this chapter at all authorized locations, including, but not limited to, ambient standards and compliance with any applicable increment or visibility requirements under part C of subchapter I of this chapter. Any such permit shall in addition require the owner or operator to notify the permitting authority in advance of each change in location. The permitting authority may require a separate permit fee for operations at each location.

(f) Permit shield

Compliance with a permit issued in accordance with this subchapter shall be deemed compliance with section 7661a of this title. Except as otherwise provided by the Administrator by rule, the permit may also provide that compliance with the permit shall be deemed compliance with other applicable provisions of this chapter that relate to the permittee if—

(1) the permit includes the applicable requirements of such provisions, or

(2) the permitting authority in acting on the permit application makes a determination relating to the permittee that such other provisions (which shall be referred to in such determination) are not applicable and the permit includes the determination or a concise summary thereof.

Nothing in the preceding sentence shall alter or affect the provisions of section 7603 of this title, including the authority of the Administrator under that section.

(July 14, 1955, ch. 360, title V, §504, as added Pub. L. 101-549, title V, §501, Nov. 15, 1990, 104 Stat. 2642.)

§ 7661d. Notification to Administrator and contiguous States

(a) Transmission and notice

(1) Each permitting authority—

(A) shall transmit to the Administrator a copy of each permit application (and any application for a permit modification or renewal) or such portion thereof, including any compliance plan, as the Administrator may require to effectively review the application and otherwise to carry out the Administrator's responsibilities under this chapter, and

(B) shall provide to the Administrator a copy of each permit proposed to be issued and issued as a final permit.

(2) The permitting authority shall notify all States—

(A) whose air quality may be affected and that are contiguous to the State in which the emission originates, or

(B) that are within 50 miles of the source,

of each permit application or proposed permit forwarded to the Administrator under this section, and shall provide an opportunity for such States to submit written recommendations respecting the issuance of the permit and its terms and conditions. If any part of those recommendations are not accepted by the permitting authority, such authority shall notify the State submitting the recommendations and the Administrator in writing of its failure to accept those recommendations and the reasons therefor.

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(b) Objection by EPA

(1) If any permit contains provisions that are determined by the Administrator as not in compliance with the applicable requirements of this chapter, including the requirements of an applicable implementation plan, the Administrator shall, in accordance with this subsection, object to its issuance. The permitting authority shall respond in writing if the Administrator (A) within 45 days after receiving a copy of the proposed permit under subsection (a)(1) of this section, or (B) within 45 days after receiving notification under subsection (a)(2) of this section, objects in writing to its issuance as not in compliance with such requirements. With the objection, the Administrator shall provide a statement of the reasons for the objection. A copy of the objection and statement shall be provided to the applicant.

(2) If the Administrator does not object in writing to the issuance of a permit pursuant to paragraph (1), any person may petition the Administrator within 60 days after the expiration of the 45-day review period specified in paragraph (1) to take such action. A copy of such petition shall be provided to the permitting authority and the applicant by the petitioner. The petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting agency (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period). The petition shall identify all such objections. If the permit has been issued by the permitting agency, such petition shall not postpone the effectiveness of the permit. The Administrator shall grant or deny such petition within 60 days after the petition is filed. The Administrator shall issue an objection within such period if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of this chapter, including the requirements of the applicable implementation plan. Any denial of such petition shall be subject to judicial review under section 7607 of this title. The Administrator shall include in regulations under this subchapter provisions to implement this paragraph. The Administrator may not delegate the requirements of this paragraph.

(3) Upon receipt of an objection by the Administrator under this subsection, the permitting authority may not issue the permit unless it is revised and issued in accordance with subsection (c) of this section. If the permitting authority has issued a permit prior to receipt of an objection by the Administrator under paragraph (2) of this subsection, the Administrator shall modify, terminate, or revoke such permit and the permitting authority may thereafter only issue a revised permit in accordance with subsection $\left(c\right)$ of this section.

(c) Issuance or denial

If the permitting authority fails, within 90 days after the date of an objection under subsection (b) of this section, to submit a permit revised to meet the objection, the Administrator shall issue or deny the permit in accordance with the requirements of this subchapter. No objection shall be subject to judicial review until the Administrator takes final action to issue or deny a permit under this subsection.

(d) Waiver of notification requirements

(1) The Administrator may waive the requirements of subsections (a) and (b) of this section at the time of approval of a permit program under this subchapter for any category (including any class, type, or size within such category) of sources covered by the program other than major sources.

(2) The Administrator may, by regulation, establish categories of sources (including any class, type, or size within such category) to which the requirements of subsections (a) and (b) of this section shall not apply. The preceding sentence shall not apply to major sources.

(3) The Administrator may exclude from any waiver under this subsection notification under subsection (a)(2) of this section. Any waiver granted under this subsection may be revoked or modified by the Administrator by rule.

(e) Refusal of permitting authority to terminate, modify, or revoke and reissue

If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit under this subchapter, the Administrator shall notify the permitting authority and the source of the Administrator's finding. The permitting authority shall, within 90 days after receipt of such notification, forward to the Administrator under this section a proposed determination of termination, modification, or revocation and reissuance, as appropriate. The Administrator may extend such 90 day period for an additional 90 days if the Administrator finds that a new or revised permit application is necessary, or that the permitting authority must require the permittee to submit additional information. The Administrator may review such proposed determination under the provisions of subsections (a) and (b) of this section. If the permitting authority fails to submit the required proposed determination, or if the Administrator objects and the permitting authority fails to resolve the objection within 90 days, the Administrator may, after notice and in accordance with fair and reasonable procedures, terminate, modify, or revoke and reissue the permit.

(July 14, 1955, ch. 360, title V, §505, as added Pub. L. 101-549, title V, §501, Nov. 15, 1990, 104 Stat. 2643.)

§7661e. Other authorities

(a) In general

Nothing in this subchapter shall prevent a State, or interstate permitting authority, from establishing additional permitting requirements not inconsistent with this chapter.

(b) Permits implementing acid rain provisions

The provisions of this subchapter, including provisions regarding schedules for submission and approval or disapproval of permit applications, shall apply to permits implementing the requirements of subchapter IV-A of this chapter except as modified by that subchapter.

(July 14, 1955, ch. 360, title V, §506, as added Pub. L. 101-549, title V, §501, Nov. 15, 1990, 104 Stat. 2645.)

§7661f. Small business stationary source technical and environmental compliance assistance program

(a) Plan revisions

Consistent with sections 7410 and 7412 of this title, each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator as part of the State implementation plan for such State or as a revision to such State implementation plan under section 7410 of this title, plans for establishing a small business stationary source technical and environmental compliance assistance program. Such submission shall be made within 24 months after November 15, 1990. The Administrator shall approve such program if it includes each of the following:

(1) Adequate mechanisms for developing, collecting, and coordinating information concerning compliance methods and technologies for small business stationary sources, and programs to encourage lawful cooperation among such sources and other persons to further compliance with this chapter.

(2) Adequate mechanisms for assisting small business stationary sources with pollution prevention and accidental release detection and prevention, including providing information concerning alternative technologies, process changes, products, and methods of operation that help reduce air pollution.

(3) A designated State office within the relevant State agency to serve as ombudsman for small business stationary sources in connection with the implementation of this chapter.

(4) A compliance assistance program for small business stationary sources which assists small business stationary sources in determining applicable requirements and in receiving permits under this chapter in a timely and efficient manner.

(5) Adequate mechanisms to assure that small business stationary sources receive notice of their rights under this chapter in such manner and form as to assure reasonably adequate time for such sources to evaluate compliance methods and any relevant or applicable proposed or final regulation or standard issued under this chapter.

(6) Adequate mechanisms for informing small business stationary sources of their obligations under this chapter, including mechanisms for referring such sources to qualified auditors or, at the option of the State, for providing audits of the operations of such sources to determine compliance with this chapter.

(7) Procedures for consideration of requests from a small business stationary source for modification ofCase: 12-3388

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establishing the magnitude of the basic design parameter(s) specified in paragraphs (h)(2)(i) and (ii) of this section.

(v) If design information is not available for a process unit, then the owner or operator shall determine the process unit's basic design parameter(s) using the maximum value achieved by the process unit in the five-year period immediately preceding the planned activity.

(vi) Efficiency of a process unit is not a basic design parameter.

(3) The replacement activity shall not cause the process unit to exceed any emission limitation, or operational limitation that has the effect of constraining emissions, that applies to the process unit and that is legally enforceable.

[51 FR 40669, Nov. 7, 1986]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting \$51.165, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

EFFECTIVE DATE NOTE: At 76 FR 17552, Mar. 30, 2011, 51.165, paragraphs (a)(1)(v)(G) and (v)(1)(vi)(C) (3) are stayed indefinitely.

§ 51.166 Prevention of significant deterioration of air quality.

(a)(1) *Plan requirements.* In accordance with the policy of section 101(b)(1) of the Act and the purposes of section 160 of the Act, each applicable State Implementation Plan and each applicable Tribal Implementation Plan shall contain emission limitations and such other measures as may be necessary to prevent significant deterioration of air quality.

(2) Plan revisions. If a State Implementation Plan revision would result in increased air quality deterioration over any baseline concentration, the plan revision shall include a demonstration that it will not cause or contribute to a violation of the applicable increment(s). If a plan revision proposing less restrictive requirements was submitted after August 7, 1977 but on or before any applicable baseline date and was pending action by the Administrator on that date, no such demonstration is necessary with respect to the area for which a baseline date would be established before final action is taken on the plan revision. Instead,

the assessment described in paragraph (a)(4) of this section, shall review the expected impact to the applicable increment(s).

(3) Required plan revision. If the State or the Administrator determines that a plan is substantially inadequate to prevent significant deterioration or that an applicable increment is being violated, the plan shall be revised to correct the inadequacy or the violation. The plan shall be revised within 60 days of such a finding by a State or within 60 days following notification by the Administrator, or by such later date as prescribed by the Administrator after consultation with the State.

(4) *Plan assessment.* The State shall review the adequacy of a plan on a periodic basis and within 60 days of such time as information becomes available that an applicable increment is being violated.

(5) *Public participation*. Any State action taken under this paragraph shall be subject to the opportunity for public hearing in accordance with procedures equivalent to those established in §51.102.

(6) Amendments. (i) Any State required to revise its implementation plan by reason of an amendment to this section, with the exception of amendments to add new maximum allowable increases or other measures pursuant to section 166(a) of the Act, shall adopt and submit such plan revision to the Administrator for approval no later than 3 years after such amendment is published in the FEDERAL REG-ISTER. With regard to a revision to an implementation plan by reason of an amendment to paragraph (c) of this section to add maximum allowable increases or other measures, the State shall submit such plan revision to the Administrator for approval within 21 months after such amendment is published in the FEDERAL REGISTER.

(ii) Any revision to an implementation plan that would amend the provisions for the prevention of significant air quality deterioration in the plan shall specify when and as to what sources and modifications the revision is to take effect.

(iii) Any revision to an implementation plan that an amendment to this section required shall take effect no

later than the date of its approval and may operate prospectively.

(7) Applicability. Each plan shall contain procedures that incorporate the requirements in paragraphs (a)(7)(i)through (vi) of this section.

(i) The requirements of this section apply to the construction of any new major stationary source (as defined in paragraph (b)(1) of this section) or any project at an existing major stationary source in an area designated as attainment or unclassifiable under sections 107(d)(1)(A)(ii) or (iii) of the Act.

(ii) The requirements of paragraphs (j) through (r) of this section apply to the construction of any new major stationary source or the major modification of any existing major stationary source, except as this section otherwise provides.

(iii) No new major stationary source or major modification to which the requirements of paragraphs (j) through (r)(5) of this section apply shall begin actual construction without a permit that states that the major stationary source or major modification will meet those requirements.

(iv) Each plan shall use the specific provisions of paragraphs (a)(7)(iv)(a)through (f) of this section. Deviations from these provisions will be approved only if the State specifically demonstrates that the submitted provisions are more stringent than or at least as stringent in all respects as the corresponding provisions in paragraphs (a)(7)(iv)(a) through (f) of this section.

(a) Except as otherwise provided in paragraphs (a)(7)(v) and (vi) of this section, and consistent with the definition of major modification contained in paragraph (b)(2) of this section, a project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases—a significant emissions increase (as defined in paragraph (b)(39) of this section), and a significant net emissions increase (as defined in paragraphs (b)(3) and (b)(23) of this section). The project is not a major modification if it does not cause a significant emissions increase. If the project causes a significant emissions increase, then the project is a major modification only if it also results in a significant net emissions increase.

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(b) The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to paragraphs (a)(7)(iv)(c) through (f) of this section. The procedure for calculating (before beginning actual construction) whether a significant net emissions increase will occur at the major stationary source (i.e., the second step of the process) is contained in the definition in paragraph (b)(3) of this section. Regardless of any such preconstruction projections, a major modification results if the project causes a significant emissions increase and a significant net emissions increase.

(c) Actual-to-projected-actual applicability test for projects that only involve existing emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in paragraph (b)(40) of this section) and the baseline actual emissions (as defined in paragraphs (b)(47)(i) and (ii) of this section) for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in paragraph (b)(23) of this section).

(d) Actual-to-potential test for projects that only involve construction of a new emissions unit(s). A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit (as defined in paragraph (b)(4) of this section) from each new emissions unit following completion of the project and the baseline actual emissions (as defined in paragraph (b)(47)(iii) of this section) of these units before the project equals or exceeds the significant amount for that pollutant (as defined in paragraph (b)(23) of this section).

(e) [Reserved]

(f) Hybrid test for projects that involve multiple types of emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in paragraphs

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(a)(7)(iv)(c) through (d) of this section as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the significant amount for that pollutant (as defined in paragraph (b)(23) of this section).

(v) The plan shall require that for any major stationary source for a PAL for a regulated NSR pollutant, the major stationary source shall comply with requirements under paragraph (w) of this section.

(b) *Definitions*. All State plans shall use the following definitions for the purposes of this section. Deviations from the following wording will be approved only if the State specifically demonstrates that the submitted definition is more stringent, or at least as stringent, in all respects as the corresponding definitions below:

(1)(i) *Major stationary source* means:

(a) Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant: Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants (with thermal dryers), primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, conversion plants, sintering fuel plants, secondary metal production plants, chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140), fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants;

(b) Notwithstanding the stationary source size specified in paragraph (b)(1)(i)(a) of this section, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or

(c) Any physical change that would occur at a stationary source not otherwise qualifying under paragraph (b)(1)of this section, as a major stationary source if the change would constitute a major stationary source by itself.

(ii) A major source that is major for volatile organic compounds or NO_X shall be considered major for ozone.

(iii) The fugitive emissions of a stationary source shall not be included in determining for any of the purposes of this section whether it is a major stationary source, unless the source belongs to one of the following categories of stationary sources:

(a) Coal cleaning plants (with thermal dryers);

(b) Kraft pulp mills;

(c) Portland cement plants;

(d) Primary zinc smelters;

(e) Iron and steel mills;

(f) Primary aluminum ore reduction plants;

(g) Primary copper smelters;

(*h*) Municipal incinerators capable of charging more than 250 tons of refuse per day;

(*i*) Hydrofluoric, sulfuric, or nitric acid plants;

(*j*) Petroleum refineries;

(*k*) Lime plants;

(l) Phosphate rock processing plants;

(*m*) Coke oven batteries;

(*n*) Sulfur recovery plants;

(*o*) Carbon black plants (furnace process);

(*p*) Primary lead smelters;

(q) Fuel conversion plants;

(r) Sintering plants;

(s) Secondary metal production plants;

(t) Chemical process plants—The term chemical processing plant shall not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140;

(*u*) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;

(v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;

(w) Taconite ore processing plants;

(x) Glass fiber processing plants;

(y) Charcoal production plants;

(z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input;

(*aa*) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

(2)(i) Major modification means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase (as defined in paragraph (b)(39) of this section) of a regulated NSR pollutant (as defined in paragraph (b)(49) of this section); and a significant net emissions increase of that pollutant from the major stationary source.

(ii) Any significant emissions increase (as defined at paragraph (b)(39) of this section) from any emissions units or net emissions increase (as defined in paragraph (b)(3) of this section) at a major stationary source that is significant for volatile organic compounds or NO_X shall be considered significant for ozone.

(iii) A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair and replacement. Routine maintenance, repair and replacement shall include, but not be limited to, any activity(s) that meets the requirements of the equipment replacement provisions contained in paragraph (y) of this section;

NOTE TO PARAGRAPH (b)(2)(iii)(a): On December 24, 2003, the second sentence of this paragraph (b)(2)(iii)(a) is stayed indefinitely by court order. The stayed provisions will become effective immediately if the court terminates the stay. At that time, EPA will publish a document in the FEDERAL REG-ISTER advising the public of the termination of the stay.

(b) Use of an alternative fuel or raw material by reason of any order under section 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas cur40 CFR Ch. I (7–1–12 Edition)

tailment plan pursuant to the Federal Power Act;

(c) Use of an alternative fuel by reason of an order or rule under section 125 of the Act;

(d) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;

(e) Use of an alternative fuel or raw material by a stationary source which:

(1) The source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975 pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR subpart I or §51.166; or

(2) The source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166;

(f) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR subpart I or §51.166.

(g) Any change in ownership at a stationary source.

(h) [Reserved]

(*i*) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, provided that the project complies with:

(1) The State implementation plan for the State in which the project is located; and

(2) Other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

(j) The installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, provided that the project does not result in an increase in the potential to emit of any regulated pollutant emitted by the unit. This exemption shall apply on a pollutant-by-pollutant basis.

(k) The reactivation of a very clean coal-fired electric utility steam generating unit.

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(iv) This definition shall not apply with respect to a particular regulated NSR pollutant when the major stationary source is complying with the requirements under paragraph (w) of this section for a PAL for that pollutant. Instead, the definition at paragraph (w)(2)(viii) of this section shall apply.

(v) Fugitive emissions shall not be included in determining for any of the purposes of this section whether a physical change in or change in the method of operation of a major stationary source is a major modification, unless the source belongs to one of the source categories listed in paragraph (b)(1)(iii) of this section.

(3)(i) Net emissions increase means, with respect to any regulated NSR pollutant emitted by a major stationary source, the amount by which the sum of the following exceeds zero:

(a) The increase in emissions from a particular physical change or change in the method of operation at a stationary source as calculated pursuant to paragraph (a)(7)(iv) of this section; and

(b) Any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are otherwise creditable. Baseline actual emissions for calculating increases and decreases under this paragraph (b)(3)(i)(b) shall be determined as provided in paragraph (b)(47), except that paragraphs (b)(47)(i)(c) and (b)(47)(ii)(d) of this section shall not apply.

(ii) An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs within a reasonable period (to be specified by the State) before the date that the increase from the particular change occurs.

(iii) An increase or decrease in actual emissions is creditable only if:

(a) It occurs within a reasonable period (to be specified by the reviewing authority); and

(b) The reviewing authority has not relied on it in issuing a permit for the source under regulations approved pursuant to this section, which permit is in effect when the increase in actual emissions from the particular change occurs; and

(c) The increase or decrease in emissions did not occur at a Clean Unit, except as provided in paragraphs (t)(8) and (u)(10) of this section.

(d) As it pertains to an increase or decrease in fugitive emissions (to the extent quantifiable), it occurs at an emissions unit that is part of one of the source categories listed in paragraph (b)(1)(iii) of this section or it occurs at an emission unit that is located at a major stationary source that belongs to one of the listed source categories. Fugitive emission increases or decreases are not included for those emissions units located at a facility whose primary activity is not represented by one of the source categories listed in paragraph (b)(1)(iii) of this section and that are not, by themselves, part of a listed source category.

(iv) An increase or decrease in actual emissions of sulfur dioxide, particulate matter, or nitrogen oxides that occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

(v) An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

(vi) A decrease in actual emissions is creditable only to the extent that:

(*a*) The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;

(b) It is enforceable as a practical matter at and after the time that actual construction on the particular change begins;

(c) It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change; and

(vii) An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

(viii) Paragraph (b)(21)(ii) of this section shall not apply for determining creditable increases and decreases.

(4) Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

(5) *Stationary source* means any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant.

(6) Building, structure, facility, or installation means all of the pollutantemitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same Major Group (i.e., which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101-0066 and 003-005-00176-0, respectively).

(7) Emissions unit means any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant and includes an electric utility steam generating unit as defined in paragraph (b)(30) of this section. For purposes of this section, there are two types of emissions units as described in paragraphs (b)(7)(i) and (ii) of this section.

(i) A new emissions unit is any emissions unit that is (or will be) newly constructed and that has existed for less than 2 years from the date such emissions unit first operated.

(ii) An existing emissions unit is any emissions unit that does not meet the requirements in paragraph (b)(7)(i) of

this section. A replacement unit, as defined in paragraph (b)(32) of this section, is an existing emissions unit.

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(8) Construction means any physical change or change in the method of operation (including fabrication, erection, installation, demolition, or modification of an emissions unit) that would result in a change in emissions.

(9) *Commence* as applied to construction of a major stationary source or major modification means that the owner or operator has all necessary preconstruction approvals or permits and either has:

(i) Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time; or

(ii) Entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.

(10) Necessary preconstruction approvals or permits means those permits or approvals required under Federal air quality control laws and regulations and those air quality control laws and regulations which are part of the applicable State Implementation Plan.

(11) Begin actual construction means, in general, initiation of physical onsite construction activities on an emissions unit which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operation this term refers to those on-site activities, other than preparatory activities, which mark the initiation of the change.

(12) Best available control technology means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each a regulated NSR pollutant which would be emitted from any proposed major stationary source or major modification which the reviewing authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such

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source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR parts 60 and 61. If the reviewing authority 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.

(13)(i) Baseline concentration means that ambient concentration level that exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each pollutant for which a minor source baseline date is established and shall include:

(a) The actual emissions, as defined in paragraph (b)(21) of this section, representative of sources in existence on the applicable minor source baseline date, except as provided in paragraph (b)(13)(ii) of this section;

(b) The allowable emissions of major stationary sources that commenced construction before the major source baseline date, but were not in operation by the applicable minor source baseline date.

(ii) The following will not be included in the baseline concentration and will affect the applicable maximum allowable increase(s):

(*a*) Actual emissions, as defined in paragraph (b)(21) of this section, from any major stationary source on which construction commenced after the major source baseline date; and (b) Actual emissions increases and decreases, as defined in paragraph (b)(21) of this section, at any stationary source occurring after the minor source baseline date.

(14)(i) *Major source baseline date* means:

(a) In the case of PM_{10} and sulfur dioxide, January 6, 1975;

(b) In the case of nitrogen dioxide, February 8, 1988; and

(c) In the case of $PM_{2.5}$, October 20, 2010.

(ii) Minor source baseline date means the earliest date after the trigger date on which a major stationary source or a major modification subject to 40 CFR 52.21 or to regulations approved pursuant to 40 CFR 51.166 submits a complete application under the relevant regulations. The trigger date is:

(a) In the case of PM_{10} and sulfur dioxide, August 7, 1977;

(b) In the case of nitrogen dioxide, February 8, 1988; and

(c) In the case of $\mathrm{PM}_{2.5,}$ October 20, 2011.

(iii) The baseline date is established for each pollutant for which increments or other equivalent measures have been established if:

(a) The area in which the proposed source or modification would construct is designated as attainment or unclassifiable under section 107(d)(1)(A)(ii) or (iii) of the Act for the pollutant on the date of its complete application under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166; and

(b) In the case of a major stationary source, the pollutant would be emitted in significant amounts, or, in the case of a major modification, there would be a significant net emissions increase of the pollutant.

(iv) Any minor source baseline date established originally for the TSP increments shall remain in effect and shall apply for purposes of determining the amount of available PM-10 increments, except that the reviewing authority may rescind any such minor source baseline date where it can be shown, to the satisfaction of the reviewing authority, that the emissions increase from the major stationary source, or the net emissions increase

from the major modification, responsible for triggering that date did not result in a significant amount of PM-10 emissions.

(15)(i) Baseline area means any intrastate area (and every part thereof) designated as attainment or unclassifiable under section 107(d)(1)(A)(ii) or (iii) of the Act in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact for the pollutant for which the baseline date is established, as follows: Equal to or greater than 1 µg/m³ (annual average) for SO₂, NO₂, or PM₁₀; or equal or greater than 0.3 µg/m³ (annual average) for PM_{2.5}.

(ii) Area redesignations under section 107(d)(1)(A)(ii) or (iii) of the Act cannot intersect or be smaller than the area of impact of any major stationary source or major modification which:

(a) Establishes a minor source baseline date; or

(b) Is subject to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166, and would be constructed in the same State as the State proposing the redesignation.

(iii) Any baseline area established originally for the TSP increments shall remain in effect and shall apply for purposes of determining the amount of available PM-10 increments, except that such baseline area shall not remain in effect if the permit authority rescinds the corresponding minor source baseline date in accordance with paragraph (b)(14)(iv) of this section.

(16) Allowable emissions means the emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:

(i) The applicable standards as set forth in 40 CFR parts 60 and 61;

(ii) The applicable State Implementation Plan emissions limitation, including those with a future compliance date; or

(iii) The emissions rate specified as a federally enforceable permit condition.

(17) Federally enforceable means all limitations and conditions which are

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enforceable by the Administrator, including those requirements developed pursuant to 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, any permit requirements established pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR part 51, subpart I, including operating permits issued under an EPA-approved program that is incorporated into the State implementation plan and expressly requires adherence to any permit issued under such program.

(18) Secondary emissions means emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. For the purposes of this section, secondary emissions must be specific, well defined, quantifiable, and impact the same general areas the stationary source modification which causes the secondary emissions. Secondary emissions include emissions from any offsite support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions which come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.

(19) Innovative control technology means any system of air pollution control that has not been adequately demonstrated in practice, but would have a substantial likelihood of achieving greater continuous emissions reduction than any control system in current practice or of achieving at least comparable reductions at lower cost in terms of energy, economics, or nonair quality environmental impacts.

(20) Fugitive emissions means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

(21)(i) Actual emissions means the actual rate of emissions of a regulated NSR pollutant from an emissions unit, as determined in accordance with paragraphs (b)(21)(ii) through (iv) of this section, except that this definition shall not apply for calculating whether

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a significant emissions increase has occurred, or for establishing a PAL under paragraph (w) of this section. Instead, paragraphs (b)(40) and (b)(47) of this section shall apply for those purposes.

(ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

(iii) The reviewing authority may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

(iv) For any emissions unit that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

(22) Complete means, in reference to an application for a permit, that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit processing does not preclude the reviewing authority from requesting or accepting any additional information.

(23)(i) Significant means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

POLLUTANT AND EMISSIONS RATE

Carbon monoxide: 100 tons per year (tpy) Nitrogen oxides: 40 tpy

- Sulfur dioxide: 40 tpy Particulate matter: 25 tpy of particulate matter emissions. 15 tpy of PM_{10} emissions
- $\mathrm{PM}_{2.5}{:}$ 10 tpy of direct $\mathrm{PM}_{2.5}$ emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions unless demonstrated not to be a $PM_{2.5}$ precursor under para-

graph (b)(49) of this section Ozone: 40 tpy of volatile organic compounds or nitrogen oxides

Lead: 0.6 tpy

Fluorides: 3 tpv

Sulfuric acid mist: 7 tpy

Hydrogen sulfide (H₂S): 10 tpy

- Total reduced sulfur (including H₂S): 10 tpy Reduced sulfur compounds (including H_2S):
- 10 tpv Municipal waste combustor organics (meas-
- tetra-through ured as total octachlorinated dibenzo-p-dioxins and dibenzofurans): 3.2 \times 10– $^{\,6}$ megagrams per year $(3.5 \times 10^{-6} \text{ tons per year})$
- Municipal waste combustor metals (measured as particulate matter): 14 megagrams per year (15 tons per year)
- Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride): 36 megagrams per year (40 tons per year)
- Municipal solid waste landfill emissions (measured as nonmethane organic compounds): 45 megagrams per vear (50 tons per vear)

(ii) Significant means, in reference to a net emissions increase or the potential of a source to emit a regulated NSR pollutant that paragraph (b)(23)(i) of this section, does not list, any emissions rate.

(iii) Notwithstanding paragraph (b)(23)(i) of this section, significant means any emissions rate or any net emissions increase associated with a major stationary source or major modification, which would construct within 10 kilometers of a Class I area, and have an impact on such area equal to or greater than 1 μ g/m³ (24-hour average).

(24) Federal Land Manager means, with respect to any lands in the United States, the Secretary of the department with authority over such lands.

(25) High terrain means any area having an elevation 900 feet or more above the base of the stack of a source.

(26) Low terrain means any area other than high terrain.

(27) Indian Reservation means any federally recognized reservation established by Treaty, Agreement, Executive Order, or Act of Congress.

(28) Indian Governing Body means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

(29) Volatile organic compounds (VOC) is as defined in §51.100(s) of this part.

ADDENDUM 13

(30) Electric utility steam generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than onethird of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

(31) [Reserved]

(32) Replacement unit means an emissions unit for which all the criteria listed in paragraphs (b)(32)(i) through (iv) of this section are met. No creditable emission reductions shall be generated from shutting down the existing emissions unit that is replaced.

(i) The emissions unit is a reconstructed unit within the meaning of (0.15) (b)(1) of this chapter, or the emissions unit completely takes the place of an existing emissions unit.

(ii) The emissions unit is identical to or functionally equivalent to the replaced emissions unit.

(iii) The replacement does not change the basic design parameter(s) (as discussed in paragraph (y)(2) of this section) of the process unit.

(iv) The replaced emissions unit is permanently removed from the major stationary source, otherwise permanently disabled, or permanently barred from operation by a permit that is enforceable as a practical matter. If the replaced emissions unit is brought back into operation, it shall constitute a new emissions unit.

(33) Clean coal technology means any technology, including technologies applied at the precombustion, combustion, or post combustion stage, at a new or existing facility which will achieve significant reductions in air emissions of sulfur dioxide or oxides of nitrogen associated with the utilization of coal in the generation of electricity, or process steam which was not in widespread use as of November 15, 1990.

(34) Clean coal technology demonstration project means a project using funds appropriated under the heading "De-

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partment of Energy—Clean Coal Technology", up to a total amount of \$2,500,000,000 for commercial demonstration of clean coal technology, or similar projects funded through appropriations for the Environmental Protection Agency. The Federal contribution for a qualifying project shall be at least 20 percent of the total cost of the demonstration project.

(35) Temporary clean coal technology demonstration project means a clean coal technology demonstration project that is operated for a period of 5 years or less, and which complies with the State implementation plan for the State in which the project is located and other requirements necessary to attain and maintain the national ambient air quality standards during and after the project is terminated.

(36)(i) Repowering means replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the Administrator, in consultation with the Secretary of Energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990.

(ii) Repowering shall also include any oil and/or gas-fired unit which has been awarded clean coal technology demonstration funding as of January 1, 1991, by the Department of Energy.

(iii) The reviewing authority shall give expedited consideration to permit applications for any source that satisfies the requirements of this subsection and is granted an extension under section 409 of the Clean Air Act.

(37) Reactivation of a very clean coalfired electric utility steam generating unit means any physical change or change in the method of operation associated with the commencement of commercial operations by a coal-fired utility unit

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after a period of discontinued operation where the unit:

(i) Has not been in operation for the two-year period prior to the enactment of the Clean Air Act Amendments of 1990, and the emissions from such unit continue to be carried in the permitting authority's emissions inventory at the time of enactment;

(ii) Was equipped prior to shutdown with a continuous system of emissions control that achieves a removal efficiency for sulfur dioxide of no less than 85 percent and a removal efficiency for particulates of no less than 98 percent;

(iii) Is equipped with low-NO $_{\rm X}$ burners prior to the time of commencement of operations following reactivation; and

(iv) Is otherwise in compliance with the requirements of the Clean Air Act.

(38) Pollution prevention means any activity that through process changes, product reformulation or redesign, or substitution of less polluting raw materials, eliminates or reduces the release of air pollutants (including fugitive emissions) and other pollutants to the environment prior to recycling, treatment, or disposal; it does not mean recycling (other than certain "in-process recycling" practices), energy recovery, treatment, or disposal.

(39) Significant emissions increase means, for a regulated NSR pollutant, an increase in emissions that is significant (as defined in paragraph (b)(23) of this section) for that pollutant.

(40)(i) Projected actual emissions means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source.

(ii) In determining the projected actual emissions under paragraph (b)(40)(i) of this section (before beginning actual construction), the owner or operator of the major stationary source:

(a) Shall consider all relevant information, including but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans under the approved plan; and

(b) Shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions; and

(c) Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under paragraph (b)(47) of this section and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or,

(d) In lieu of using the method set out in paragraphs (b)(40)(ii)(a) through (c) of this section, may elect to use the emissions unit's potential to emit, in tons per year, as defined under paragraph (b)(4) of this section.

(41) [Reserved]

(42) Prevention of Significant Deterioration Program (PSD) program means a major source preconstruction permit program that has been approved by the Administrator and incorporated into the plan to implement the requirements of this section, or the program in §52.21 of this chapter. Any permit issued under such a program is a major NSR permit.

(43) Continuous emissions monitoring system (CEMS) means all of the equipment that may be required to meet the data acquisition and availability requirements of this section, to sample, condition (if applicable), analyze, and provide a record of emissions on a continuous basis.

(44) Predictive emissions monitoring system (PEMS) means all of the equipment necessary to monitor process and control device operational parameters (for example, control device secondary

voltages and electric currents) and other information (for example, gas flow rate, O^2 or CO^2 concentrations), and calculate and record the mass emissions rate (for example, lb/hr) on a continuous basis.

(45) Continuous parameter monitoring system (CPMS) means all of the equipment necessary to meet the data acquisition and availability requirements of this section, to monitor process and control device operational parameters (for example, control device secondary voltages and electric currents) and other information (for example, gas flow rate, O^2 or CO^2 concentrations), and to record average operational parameter value(s) on a continuous basis.

(46) Continuous emissions rate monitoring system (CERMS) means the total equipment required for the determination and recording of the pollutant mass emissions rate (in terms of mass per unit of time).

(47) Baseline actual emissions means the rate of emissions, in tons per year, of a regulated NSR pollutant, as determined in accordance with paragraphs (b)(47)(i) through (iv) of this section.

(i) For any existing electric utility steam generating unit, baseline actual emissions means the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5year period immediately preceding when the owner or operator begins actual construction of the project. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

(a) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24month period.

(c) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period can be used For each regulated NSR pollutant.

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(d) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraph (b)(47)(i)(b) of this section.

(ii) For an existing emissions unit (other than an electric utility steam generating unit), baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the reviewing authority for a permit required either under this section or under a plan approved by the Administrator, whichever is earlier, except that the 10year period shall not include any period earlier than November 15, 1990.

(a) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24month period.

(c) The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24-month period. However, if an emission limitation is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under part 63 of this chapter, the baseline actual emissions need only be adjusted if the State has taken credit

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for such emissions reductions in an attainment demonstration or maintenance plan consistent with the requirements of \$51.165(a)(3)(ii)(G).

(d) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period can be used For each regulated NSR pollutant.

(e) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraphs (b)(47)(ii)(b) and (c) of this section.

(iii) For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit.

(iv) For a PAL for a stationary source, the baseline actual emissions shall be calculated for existing electric utility steam generating units in accordance with the procedures contained in paragraph (b)(47)(i) of this section, for other existing emissions units in accordance with the procedures contained in paragraph (b)(47)(ii) of this section, and for a new emissions unit in accordance with the procedures contained in paragraph (b)(47)(iii) of this section.

(48) Subject to regulation means, for any air pollutant, that the pollutant is subject to either a provision in the Clean Air Act, or a nationally-applicable regulation codified by the Administrator in subchapter C of this chapter, that requires actual control of the quantity of emissions of that pollutant, and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity. Except that:

(i) *Greenhouse gases* (*GHGs*), the air pollutant defined in §86.1818-12(a) of this chapter as the aggregate group of

six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be subject to regulation except as provided in paragraphs (b)(48)(iv) through (v) of this section.

(ii) For purposes of paragraphs (b)(48)(iii) through (v) of this section, the term tpy CO_2 equivalent emissions (CO_2e) shall represent an amount of GHGs emitted, and shall be computed as follows:

(a) Multiplying the mass amount of emissions (tpy), for each of the six greenhouse gases in the pollutant GHGs, by the gas's associated global warming potential published at Table A-1 to subpart A of part 98 of this chapter-Global Warming Potentials. For purposes of this paragraph (b)(48)(ii)(a), prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or microorganisms (including products, byproducts, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).

(b) Sum the resultant value from paragraph (b)(48)(ii)(a) of this section for each gas to compute a tpy CO₂e.

(iii) The term emissions increase as used in paragraphs (b)(48)(iv) through (v) of this section shall mean that both a significant emissions increase (as calculated using the procedures in (a)(7)(iv) of this section) and a significant net emissions increase (as defined in paragraphs (b)(3) and (b)(23) of this section) occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO_2e , and shall be calculated assuming the pollutant GHGs is a regulated NSR pollutant, and "significant" is defined as 75,000 tpy CO₂e instead of applying the value in paragraph (b)(23)(ii) of this section.

(iv) Beginning January 2, 2011, the pollutant GHGs is subject to regulation if:

(a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit 75,000 tpy CO_2e or more; or

(b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of 75,000 tpy CO_2e or more; and,

(v) Beginning July 1, 2011, in addition to the provisions in paragraph (b)(48)(iv) of this section, the pollutant GHGs shall also be subject to regulation:

(a) At a new stationary source that will emit or have the potential to emit $100,000 \text{ tpy CO}_{2}\text{e}$; or

(b) At an existing stationary source that emits or has the potential to emit 100,000 tpy CO_{2e} , when such stationary source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO_{2e} or more.

(49) *Regulated NSR pollutant*, for purposes of this section, means the following:

(i) Any pollutant for which a national ambient air quality standard has been promulgated and any pollutant identified under this paragraph (b)(49)(i) as a constituent or precursor to such pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.

(b) Sulfur dioxide is a precursor to $PM_{2.5}$ in all attainment and unclassifiable areas.

(c) Nitrogen oxides are presumed to be precursors to $PM_{2.5}$ in all attainment and unclassifiable areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

(d) Volatile organic compounds are presumed not to be precursors to $PM_{2.5}$ in any attainment or unclassifiable area, unless the State demonstrates to

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the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient $PM_{2.5}$ concentrations.

(ii) Any pollutant that is subject to any standard promulgated under section 111 of the Act;

(iii) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act;

(iv) Any pollutant that otherwise is subject to regulation under the Act as defined in paragraph (b)(48) of this section.

(v) Notwithstanding paragraphs (b)(49)(i) through (iv) of this section, the term *regulated NSR pollutant* shall not include any or all hazardous air pollutants either listed in section 112 of the Act, or added to the list pursuant to section 112(b)(2) of the Act, and which have not been delisted pursuant to section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under section 108 of the Act.

(vi) Particulate matter (PM) emissions, $PM_{2.5}$ emissions, and PM_{10} emissions shall include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures. On or after January 1, 2011 (or any earlier date established in the upcoming rulemaking codifying test methods), such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM, $\mathrm{PM}_{2.5}$ and PM_{10} in PSD permits. Compliance with emissions limitations for PM, PM_{2.5} and PM_{10} issued prior to this date shall not be based on condensable particular matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particular matter shall not be considered in violation of this section unless the applicable implementation plan required condensable particular matter to be included.

(50) *Reviewing authority* means the State air pollution control agency,

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local agency, other State agency, Indian tribe, or other agency authorized by the Administrator to carry out a permit program under §51.165 and this section, or the Administrator in the case of EPA-implemented permit programs under §52.21 of this chapter.

(51) *Project* means a physical change in, or change in method of operation of, an existing major stationary source.

(52) Lowest achievable emission rate (LAER) is as defined in §51.165(a)(1)(xiii).

(53)(i) In general, process unit means any collection of structures and/or equipment that processes, assembles, applies, blends, or otherwise uses material inputs to produce or store an intermediate or a completed product. A single stationary source may contain more than one process unit, and a process unit may contain more than one emissions unit.

(ii) Pollution control equipment is not part of the process unit, unless it serves a dual function as both process and control equipment. Administrative and warehousing facilities are not part of the process unit.

(iii) For replacement cost purposes, components shared between two or more process units are proportionately allocated based on capacity.

(iv) The following list identifies the process units at specific categories of stationary sources.

(a) For a steam electric generating facility, the process unit consists of those portions of the plant that contribute directly to the production of electricity. For example, at a pulverized coal-fired facility, the process unit would generally be the combination of those systems from the coal receiving equipment through the emission stack (excluding post-combustion pollution controls), including the coal handling equipment, pulverizers or coal crushers, feedwater heaters, ash handling, boiler, burners, turbine-generator set, condenser, cooling tower, water treatment system, air preheaters, and operating control systems. Each separate generating unit is a separate process unit.

(b) For a petroleum refinery, there are several categories of process units: those that separate and/or distill petroleum feedstocks; those that change molecular structures; petroleum treating processes; auxiliary facilities, such as steam generators and hydrogen production units; and those that load, unload, blend or store intermediate or completed products.

(c) For an incinerator, the process unit would consist of components from the feed pit or refuse pit to the stack, including conveyors, combustion devices, heat exchangers and steam generators, quench tanks, and fans.

NOTE TO PARAGRAPH (b)(53): By a court order on December 24, 2003, this paragraph (b)(53) is stayed indefinitely. The stayed provisions will become effective immediately if the court terminates the stay. At that time, EPA will publish a document in the FEDERAL REGISTER advising the public of the termination of the stay.

(54) Functionally equivalent component means a component that serves the same purpose as the replaced component.

NOTE TO PARAGRAPH (b)(54): By a court order on December 24, 2003, this paragraph (b)(54) is stayed indefinitely. The stayed provisions will become effective immediately if the court terminates the stay. At that time, EPA will publish a document in the FEDERAL REGISTER advising the public of the termination of the stay.

(55) Fixed capital cost means the capital needed to provide all the depreciable components. "Depreciable components" refers to all components of fixed capital cost and is calculated by subtracting land and working capital from the total capital investment, as defined in paragraph (b)(56) of this section.

NOTE TO PARAGRAPH (b)(55): By a court order on December 24, 2003, this paragraph (b)(55) is stayed indefinitely. The stayed provisions will become effective immediately if the court terminates the stay. At that time, EPA will publish a document in the FEDERAL REGISTER advising the public of the termination of the stay.

(56) Total capital investment means the sum of the following: all costs required to purchase needed process equipment (purchased equipment costs); the costs of labor and materials for installing that equipment (direct installation costs); the costs of site preparation and buildings; other costs such as engineering, construction and field expenses,

fees to contractors, startup and performance tests, and contingencies (indirect installation costs); land for the process equipment; and working capital for the process equipment.

NOTE TO PARAGRAPH (b)(56): By a court order on December 24, 2003, this paragraph (b)(56) is stayed indefinitely. The stayed provisions will become effective immediately if the court terminates the stay. At that time, EPA will publish a document in the FEDERAL

REGISTER advising the public of the termination of the stay.

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(c) Ambient air increments and other measures. (1) The plan shall contain emission limitations and such other measures as may be necessary to assure that in areas designated as Class I, II, or III, increases in pollutant concentrations over the baseline concentration shall be limited to the following:

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Class I Area	
Annual arithmetic mean	1 2
PM ₁₀ : Annual arithmetic mean	4
Sulfur dioxide:	0
Annual arithmetic mean	2 5
3-hr maximum	25
Annual arithmetic mean	2.5
Class II Area	
PM _{2.5} :	
Annual arithmetic mean	4
24-hr maximum	9
Annual arithmetic mean	17
Sulfur dioxide:	30
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	512
Nitrogen dioxide: Annual arithmetic mean	25
Class III Area	
PM _{2.5} :	
Annual arithmetic mean	8
24-nr maximum	18
Annual arithmetic mean	34
24-hr maximum	60
Sulfur dioxide:	
Annual arithmetic mean	40
24-hr maximum	182
3-hr maximum	700
Annual arithmetic mean	50

For any period other than an annual period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location. (2) Where the State can demonstrate that it has alternative measures in its plan other than maximum allowable increases as defined under paragraph (c)(1) of this section, that satisfy the

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requirements in sections 166(c) and 166(d) of the Clean Air Act for a regulated NSR pollutant for which the Administrator has established maximum allowable increases pursuant to section 166(a) of the Act, the requirements for maximum allowable increases for that pollutant under paragraph (c)(1) of this section shall not apply upon approval of the plan by the Administrator. The following regulated NSR pollutants are eligible for such treatment:

(i) Nitrogen dioxide.

(ii) PM_{2.5}.

(d) *Ambient air ceilings*. The plan shall provide that no concentration of a pollutant shall exceed:

(1) The concentration permitted under the national secondary ambient air quality standard, or

(2) The concentration permitted under the national primary ambient air quality standard, whichever concentration is lowest for the pollutant for a period of exposure.

(e) Restrictions on area classifications. The plan shall provide that—

(1) All of the following areas which were in existence on August 7, 1977, shall be Class I areas and may not be redesignated:

(i) International parks,

(ii) National wilderness areas which exceed 5,000 acres in size,

(iii) National memorial parks which exceed 5,000 acres in size, and

(iv) National parks which exceed 6,000 acres in size.

(2) Areas which were redesignated as Class I under regulations promulgated before August 7, 1977, shall remain Class I, but may be redesignated as provided in this section.

(3) Any other area, unless otherwise specified in the legislation creating such an area, is initially designated Class II, but may be redesignated as provided in this section.

(4) The following areas may be redesignated only as Class I or II:

(i) An area which as of August 7, 1977, exceeded 10,000 acres in size and was a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore or seashore; and (ii) A national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres in size.

(f) Exclusions from increment consumption. (1) The plan may provide that the following concentrations shall be excluded in determining compliance with a maximum allowable increase:

(i) Concentrations attributable to the increase in emissions from stationary sources which have converted from the use of petroleum products, natural gas, or both by reason of an order in effect under section 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) over the emissions from such sources before the effective date of such an order;

(ii) Concentrations attributable to the increase in emissions from sources which have converted from using natural gas by reason of natural gas curtailment plan in effect pursuant to the Federal Power Act over the emissions from such sources before the effective date of such plan;

(iii) Concentrations of particulate matter attributable to the increase in emissions from construction or other temporary emission-related activities of new or modified sources;

(iv) The increase in concentrations attributable to new sources outside the United States over the concentrations attributable to existing sources which are included in the baseline concentration; and

(v) Concentrations attributable to the temporary increase in emissions of sulfur dioxide, particulate matter, or nitrogen oxides from stationary sources which are affected by plan revisions approved by the Administrator as meeting the criteria specified in paragraph (f)(4) of this section.

(2) If the plan provides that the concentrations to which paragraph (f)(1) (i) or (ii) of this section, refers shall be excluded, it shall also provide that no exclusion of such concentrations shall apply more than five years after the effective date of the order to which paragraph (f)(1)(i) of this section, refers or the plan to which paragraph (f)(1)(i) of this section, refers, whichever is applicable. If both such order and plan are applicable, no such exclusion shall Document: 18 DEPARTMENT OF NATURAL RESOURCES Pages: 147 NR 405.02

Chapter NR 405

PREVENTION OF SIGNIFICANT DETERIORATION

NR 405.01	Applicability; purpose.	NR 405.09	Source impact analysis.
NR 405.02	Definitions.	NR 405.10	Air quality models.
NR 405.03	Restrictions on area classifications.	NR 405.11	Air quality analysis.
NR 405.04	Exclusions from increment consumption.	NR 405.12	Source information.
NR 405.05	Redesignation.	NR 405.13	Additional impact analyses.
NR 405.06	Stack heights.	NR 405.14	Sources impacting federal Class I areas - additional requirements
NR 405.07	Review of major stationary sources and major modifications	NR 405.15	Public participation.
	source applicability and exemptions.	NR 405.16	Source obligation.
NR 405.08	Control technology review.	NR 405.17	Innovative control technology.

NR 405.01 Applicability; purpose. (1) APPLICABILITY. The provisions of this chapter apply to all new major stationary sources and all major modifications to major sources located in areas designated as attainment or unclassified.

(2) PURPOSE. The purpose of this chapter is to establish, pursuant to s. 285.60, Stats., the requirements and procedures for reviewing and issuing air pollution control permits to all new major stationary sources and all major modifications to major sources located in areas designated as attainment or unclassified.

Note: Throughout the proposed rule, changes have been made which result in the provisions of this PSD rule differing from 40 CFR 51.166, the federal regulation on which it is based. In this rule, the term "air contaminant" is substituted for the term "pollutant" in the federal regulation and "department" for "the State", "the Governor" and "reviewing authority". The federal definition for "building, structure, facility or installation" is applied to the phrase "facility, building, structure, equipment, vehicle or action" – a similar term which appears in Wisconsin's statutory provisions on air pollution. In addition, cross references in the federal regulation have been changed in the rule to comparable provisions in Wisconsin's rule (e.g., "40 CFR Parts 60 and 61" has been changed to "chs. NR 440 and 447 to 449 and subch. III of ch. NR 446"). Eliminated from the rule are provisions of the federal aregulations which do not apply to the state's PSD program (i.e., provisions governing EPA approval of plan revisions).

History: Cr. Register, January, 1987. No. 373, eff. 2-1-87; correction in (2) made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1996, No. 492.

NR 405.02 Definitions. The definitions contained in ch. NR 400 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

(1) "Actual emissions" means the actual rate of emissions of an air contaminant from an emissions unit, as determined in accordance with pars. (a) through (d):

(a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the air contaminant during a 2-year period which precedes the particular date and which is representative of normal source operation. The department may allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

(b) The department may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit unless reliable data are available which demonstrate that the actual emissions are different than the source-specific allowable emissions.

(c) For any emissions unit, other than an electric utility steam generating unit, which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

(d) For an electric utility steam generating unit, other than a new unit or the replacement of an existing unit, actual emissions of the unit following the physical or operational change shall equal the representative actual annual emissions of the unit, provided the source owner or operator maintains and submits to the department, on an annual basis for a period of 5 years from the date the unit resumes regular operation, information demonstrating that the physical or operational change did not result in an emissions increase. A longer period, not to exceed 10 years, may be required by the department if the department determines such a period to be more representative of normal source post-change operations.

(2) "Allowable emissions" means the emissions rate of a stationary source calculated using the maximum rated capacity of the source, unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both, and the most stringent of the following:

(a) The applicable standards as set forth in chs. NR 440 and 445 to 449 and under sections 111 and 112 of the Act (42 USC 7411 and 7412).

(b) The applicable emissions limitations, as set forth in chs. NR 400 to 499.

(c) The emissions rate specified as a federally enforceable permit condition.

(3) "Baseline area" means any intrastate area, and every part thereof, designated as attainment or unclassifiable under section 107 (d) (1) (D) or (E) of the Act (42 USC 7407 (d) (1) (D) or (E)) in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact equal to or greater than 1 μ g/m³ (annual average) of the air contaminant for which the minor source baseline date is established. Area redesignations under section 107 (d) (1) (D) or (E) of the Act cannot intersect or be smaller than the area of impact of any major stationary source or major modification which either establishes a minor source baseline date or is subject to this chapter.

(4) (a) "Baseline concentration" means that ambient concentration level which exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each air contaminant for which a minor source baseline date is established and shall include:

1. The actual emissions representative of sources in existence on the applicable minor source baseline date, except as provided in par. (b).

2. The allowable emissions of major stationary sources which commenced construction before the major source baseline date, but were not in operation by the applicable minor source baseline date.

(b) The following will not be included in the baseline concentration and will affect the applicable maximum allowable increases:

1. Actual emissions from any major stationary source on which construction commenced after the major source baseline date.

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2. Actual emissions increases and decreases at any stationary source occurring after the minor source baseline date.

(6) "Begin actual construction" means, in general, initiation of physical on-site construction activities on an emissions unit which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework and construction of permanent storage structures. With respect to a change in method of operation, this term refers to those on-site activities, other than preparatory activities, which mark the initiation of the change.

(7) "Best available control technology" or "BACT" means an emissions limitation, including a visible emissions standard, based on the maximum degree of reduction for each air contaminant subject to regulation under the Act which would be emitted from any proposed major stationary source or major modification which the department, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including clean fuels, fuel cleaning or treatment or innovative fuel combination techniques for control of the air contaminant. In no event may application of best available control technology result in emissions of any air contaminant which would exceed the emissions allowed by any applicable standard under chs. NR 440 and 445 to 449 and under sections 111 and 112 of the Act (42 USC 7411 and 7412). Emissions from any source utilizing clean fuels or any other means to comply with this subsection may not be allowed to increase above the levels that would have been required under this subsection as it existed prior to enactment of the 1990 clean air Act amendments on November 15, 1990. If the department 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. The 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.

(8) "Building, structure, facility or installation" or "facility, building, structure, equipment, vehicle or action" means all of the air contaminant emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Air contaminant emitting activities shall be considered as part of the same industrial grouping if they are classified under the same 2-digit major group as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05.

(8m) "Clean coal technology" means any technology, including technologies applied at the precombustion, combustion, or post combustion stage, at a new or existing facility which will achieve significant reductions in air emissions of sulfur dioxide or oxides of nitrogen associated with the utilization of coal in the generation of electricity, or process steam, which was not in widespread use as of November 15, 1990.

(8s) "Clean coal technology demonstration project" means a project using funds appropriated under the heading 'Department of Energy-Clean Coal Technology', up to a total amount of \$2,500,000,000 for commercial demonstration of clean coal technology, or similar projects funded through appropriations for the U.S. environmental protection agency. The federal contribution for a qualifying project shall be at least 20% of the total cost of the demonstration project.

(9) "Commence" as applied to construction of a major stationary source or major modification means that the owner or operator has all necessary preconstruction approvals or permits and has done one of the following:

(a) Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time.

(b) Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.

(10) "Complete" means, in reference to an application for a permit, that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit processing does not preclude the department from requesting or accepting any additional information.

(11) "Construction" means any physical change or change in the method of operation (including fabrication, erection, installation, demolition, or modification of an emissions unit) which would result in a change in actual emissions.

(11m) "Electric utility steam generating unit" means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steamelectric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

(12) "Emissions unit" means any part of a stationary source which emits or would have the potential to emit any air contaminant subject to regulation under the act.

(13) "Federal land manager" means, with respect to any lands in the United States, the secretary of the department with authority over such lands.

(15) "Fugitive emissions" means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

(16) "High terrain" means any area having an elevation 900 feet or more above the base of the stack of a source.

(17) "Indian governing body" means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

(18) "Indian reservation" means any federally recognized reservation established by treaty, agreement, executive order, or act of congress.

(19) "Innovative control technology" means any system of air pollution control that has not been adequately demonstrated in practice, but would have a substantial likelihood of achieving greater continuous emissions reduction than any control system in current practice or of achieving at least comparable reductions at lower cost in terms of energy, economics, or nonair quality environmental impacts.

(20) "Low terrain" means any area other than high terrain.

(21) "Major modification" means any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any air contaminant subject to regulation under the act.

(a) Any net emissions increase that is significant for volatile organic compounds shall be considered significant for ozone.

(b) A physical change or change in the method of operation does not include:

1. Routine maintenance, repair, and replacement.

2. Use of an alternative fuel or raw material by reason of any order under sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (15 USC 791 to 798) or by

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Power Act (16 USC 791a to 828c).
3. Use of an alternative fuel by reason of an order or rule under section 125 of the Act (42 USC 7425).

4. Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste.

5. Use of an alternative fuel or raw material by a stationary source when one of the following applies:

a. The source was capable of accommodating the alternative fuel or raw material before January 6, 1975, unless the change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975 pursuant to this chapter or ch. NR 406 or 408 or under an operation permit issued pursuant to ch. NR 407.

b. The source is approved to use the alternative fuel or raw material under any permit issued under this chapter or ch. NR 406, 407 or 408.

6. An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to this chapter, ch. NR 406 or 408 or 40 CFR 52.21 or under an operation permit issued pursuant to ch. NR 407.

7. Any change in ownership at a stationary source.

8. The addition, replacement or use of a pollution control project at an existing electric utility steam generating unit, unless the department determines that the addition, replacement or use renders the unit less environmentally beneficial, or except when the department determines both of the following:

a. There is reason to believe that the pollution control project would result in a significant net increase in representative actual annual emissions of any pollutant for which a national ambient air quality standard has been adopted over levels used for that source in the most recent air quality impact analysis in the area conducted for the purpose of title I of the Act (42 USC 7401 to 7515), if any.

b. The increase will cause or contribute to a violation of any national ambient air quality standard or air quality increment, or visibility limitation.

9. The installation, operation, cessation or removal of a temporary clean coal technology demonstration project, provided that the project complies with both of the following:

a. The state implementation plan.

b. Other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

10. The installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, provided that the project does not result in an increase in the potential to emit of any regulated pollutant emitted by the unit. This exemption shall apply on a pollutant–by–pollutant basis.

11. The reactivation of a very clean coal-fired electric utility steam generating unit.

(21m) "Major source baseline date" means:

(a) In the case of particulate matter and sulfur dioxide, January 6, 1975.

(b) In the case of nitrogen dioxide, February 8, 1988.

(22) (a) "Major stationary source" means:

1. Any of the following stationary sources of air contaminants which emits, or has the potential to emit, 100 tons per year or more of any air contaminant subject to regulation under the act: Fossil fuel fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants.

2. Notwithstanding the stationary source size specified in subd. 1., any stationary source which emits, or has the potential to emit, 250 tons per year or more of any air contaminant subject to regulation under the act.

3. Any physical change that would occur at a stationary source not otherwise qualifying under this subsection as a major stationary source, if the change would constitute a major stationary source by itself.

(b) A major source that is major for volatile organic compounds shall be considered major for ozone.

(c) Volatile organic compounds exclude the compounds listed under s. NR 400.02 (162) unless the compound is subject to an emission limitation under chs. NR 440 and 447 to 449 and subch. III of ch. NR 446.

(d) Mobile source emissions indirectly caused by a source which attracts mobile source activity may not be considered in determining whether the source is a major stationary source for the purposes of this chapter.

(22m) (a) "Minor source baseline date" means the earliest date after the trigger date on which the owner or operator of a major stationary source or a major modification subject to 40 CFR 52.21 or to regulations approved pursuant to 40 CFR 51.166 submits a complete application under the relevant regulations. The trigger date is:

1. In the case of particulate matter and sulfur dioxide, August 7, 1977.

2. In the case of nitrogen dioxide, February 8, 1988.

(b) The minor source baseline date is established for each air contaminant for which increments or other equivalent measures have been established if:

1. The area in which the proposed source or modification would construct is designated as attainment or unclassifiable under section 107 (d) (1) (D) or (E) of the Act (42 USC 7407(d)(1)(D) or (E)) for the air contaminant on the date of its complete application under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166.

2. In the case of a major stationary source, the air contaminant would be emitted in significant amounts or, in the case of a major modification, there would be a significant net emissions increase of the air contaminant.

(23) "Necessary preconstruction approvals or permits" means those permits or approvals required under chs. NR 400 to 499.

(24) (a) "Net emissions increase" means the amount by which the sum of the following exceeds zero:

1. Any increase in actual emissions from a particular physical change or change in the method of operation at a stationary source.

2. Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable.

(b) An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between the following:

1. The date 5 years before construction on the particular change commences.

2. The date that the increase from the particular change occurs.

(c) An increase or decrease in actual emissions is creditable only if the reviewing authority has not relied on it in issuing a permit for the source under this chapter, which permit is in effect when the increase in actual emissions from the particular change occurs.

(d) An increase or decrease in actual emissions of sulfur dioxide, nitrogen oxides or particulate matter measured as PM_{10} which occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

(e) An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

(f) A decrease in actual emissions is creditable only to the extent that:

1. The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions.

2. It is federally enforceable at and after the time that actual construction on the particular change begins.

3. It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.

(g) An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

(24m) "Pollution control project" means any activity or project undertaken at an existing electric utility steam generating unit for purposes of reducing emissions from the unit. Activities or projects are limited to the following:

(a) The installation of conventional or innovative pollution control technology, including but not limited to advanced flue gas desulfurization, sorbent injection for sulfur dioxide and nitrogen oxides controls and electrostatic precipitators.

(b) An activity or project to accommodate switching to a fuel which is less polluting than the fuel in use prior to the activity or project, including, but not limited to, natural gas or coal re-burning, or the co-firing of natural gas and other fuels for the purpose of controlling emissions.

(c) A permanent clean coal technology demonstration project conducted under title II, section 101 (d) of the Further Continuing Appropriations Act of 1985 (42 USC 5903 (d)), or subsequent appropriations, up to a total amount of \$2,500,000,000 for commercial demonstration of clean coal technology, or similar projects funded through appropriations for the U.S. environmental protection agency.

(d) A permanent clean coal technology demonstration project that constitutes a repowering project.

(25) "Potential to emit" means the maximum capacity of a stationary source to emit an air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit an air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

(25g) "Reactivation of a very clean coal-fired electric utility steam generating unit" means any physical change or change in the method of operation associated with the commencement of commercial operations by a coal-fired utility unit after a period of discontinued operation where the unit meets all of the following criteria:

(a) It has not been in operation for the 2-year period prior to the enactment of the clean air Act amendments of 1990 on November 15, 1990, and the emissions from the unit continue to be carried in the department's emissions inventory at the time of enactment.

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(b) It was as equipped prior to shutdown with a continuous system of emissions control that achieves a removal efficiency for sulfur dioxide of no less than 85% and a removal efficiency for particulates of no less than 98%.

(c) It is equipped with $low-NO_x$ burners prior to the time of commencement of operations following reactivation.

(d) It is otherwise in compliance with the requirements of the act.

(25m) (a) "Repowering" means replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the administrator, in consultation with the federal secretary of energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990.

(b) Repowering shall also include any unit fired by oil or gas or both which has been awarded clean coal technology demonstration funding as of January 1, 1991, by the federal department of energy.

(c) The department shall give expedited consideration to permit applications for any source that satisfies the requirements of this subsection and is granted an extension under section 409 of the Act (42 USC 7651h).

(25s) "Representative actual annual emissions" means the average rate, in tons per year, at which the source is projected to emit a pollutant for the 2-year period after a physical change or change in the method of operation of a unit, or a different consecutive 2-year period within 10 years after that change, where the department determines that such period is more representative of normal source operations, considering the effect any such change will have on increasing or decreasing the hourly emissions rate and on projected capacity utilization. In projecting future emissions the department shall:

(a) Consider all relevant information, including but not limited to, historical operational data, the company's own representations, filings with the state or federal regulatory authorities, and compliance plans under title IV of the act.

(b) Exclude, in calculating any increase in emissions that results from the particular physical change or change in the method of operation at an electric utility steam generating unit, that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole.

(26) "Secondary emissions" means emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. For the purposes of this chapter, secondary emissions must be specific, well defined, quantifiable, and impact the same general areas as the stationary source or modification which causes the secondary emissions. Secondary emissions include emissions from any offsite support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions which come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.

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• (27) (a) "Significant" means, in reference to a net emissions increase or the potential of a source to emit any of the air contaminants in Table A, a rate of emissions that would equal or exceed any of the rates in Table A.

Table APollutant and Emissions Rate

1. Carbon monoxide: 100 tons per year (tpy)

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2. Nitrogen oxides: 40 tpy

3. Sulfur dioxide: 40 tpy

Particulate matter: 25 tpy

5. PM₁₀: 15 tpy

6. Ozone: 40 tpy of volatile organic compounds

7. Lead: 0.60 tpy

8. Mercury: 0.10 tpy

9. Fluorides: 3.0 tpy

10. Sulfuric acid mist: 7.0 tpy

11. Hydrogen sulfide (H₂S): 10 tpy

12. Total reduced sulfur (including H₂S): 10 tpy

13. Reduced sulfur compounds (including H₂S): 10 tpy

14. Municipal waste combustor (MWC) acid gases (measured as total sulfur dioxide and hydrogen chloride): 40 tpy

15. MWC metals (measured as particulate matter): 15 tpy

16. MWC organics (measured as total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans): 3.5×10^{-6} tpy

17. CFCs 11, 12, 112, 114, 115: any emission rate

18. Halons 1211, 1301, 2402; any emission rate

(c) "Significant" means any emissions rate in reference to a net emissions increase or the potential of a source to emit an air contaminant subject to regulation under the Act other than air contaminants listed in par. (a) or under section 112 (b) of the Act (42 USC 7412 (b)).

(d) Notwithstanding par. (a), "significant" means any emissions rate or any net emissions increase associated with a major stationary source or major modification, which would construct within 10 kilometers of a Class I area, and have an impact on such area equal to or greater than 1 μ g/m³ (24-hour average).

(28) "Stationary source" means any building, structure, facility or installation which emits or may emit any air contaminant subject to regulation under the act.

(29) "Temporary clean coal technology demonstration project" means a clean coal technology demonstration project that is operated for a period of 5 years or less, and which complies with the state implementation plans for the state in which the project is located and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

History: Cr. Register, January, 1987, No. 373, eff. 2–1–87; am. (27) (a) Register. December, 1988, No. 396, eff. 1–1–89; am. (intro.), (22) (c), (24) (d), (27) (b) and (28), cr. (22) (d), Register, May, 1992, No. 437, eff. 6–1–92; emerg. am. (7) and (27) (a) and (b), eff. 11–15–92; am. (intro.), (1) (c), (7), (8) and (27) (a), cr. (1) (d), (8m) (8s), (11m), (21) (b) & to 11., (24m), (25g), (25m), (25s) and (29), renum. (14) to be NR 400.02 (39m) and am. r. (27) (b), Register, May, 1993, No. 449, eff. 6–1–93; corrections in (1) (intro.) and (25g) (a) made under s. 13.93 (2m) (b) 7, and 6. Stats., Register, May, 1993, No. 449; am. (1) (b), (2) (a), (3) (intro.), (7), (21) (b) 6., (24) (d), (25m) (b), (c), Register, April, 1995, No. 472, eff. 5–1–95; am. (1) (d), (2) (intro.), (3) (intro.), (a), (4) (a) (intro.), 1. and 2., (b) 1. and 2., (7), (8), (12), (21) (intro.), (b) 3... 5. a. and b, 6., 8. a., (22) (a) 1. and 2., (24) (d), (25g) (d), (25m) (a) and (c), (25s) (intro.) and (a), (27) (c) and (28), r. (5), cr. (21m) and (22m), Register, December, 1995, No. 480, eff. 1–1–96; am. (3) (intro.), (7), (9) (intro.), (21) (b) 2., 3., 8 and 9. (intro.) (22m) (b) 1., (24) (b) (intro.), 1., (24m) (intro.), (25g) and (25m) (a), r. (3) (a), (b), Register, December, 1996, No. 492, eff. 1–1–97; am. (21) (b) (intro.), 5. and (22) (c), Register, Cotober, 1999, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, December, 1996, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, December, 1999, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, October, 1999, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, December, 1996, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, December, 1999, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, December, 1999, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (22) (c), Register, December, 1999, No. 526, eff. 11–1–97; cm. (21) (b) (intro.), 5. and (2

NR 405.03 Restrictions on area classifications. (1) All of the following areas which were in existence on August

7, 1977, shall be Class I areas and may not be redesignated by the department:

(a) International parks.

(b) National wilderness areas which exceed 5,000 acres in size.

(c) National memorial parks which exceed 5,000 acres in size.

(d) National parks which exceed 6,000 acres in size.

(2) Any other area, unless otherwise specified in the legislation creating such an area, is initially designated Class II, but may be redesignated as provided in this chapter.

(3) The following areas may be redesignated only as Class I or II:

(a) An area which as of August 7, 1977, exceeded 10,000 acres in size and was a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore or seashore.

(b) A national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres in size.

(4) The extent of the areas referred to in subs. (1) and (3) shall conform to any changes in the boundaries which have occurred subsequent to August 7, 1977.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; emerg. cr. (4), eff. 11-15-92; cr. (4), Register, May, 1993, No. 449, eff. 6-1-93.

NR 405.04 Exclusions from increment consumption. (1) All of the following concentrations shall be excluded in determining compliance with a maximum allowable increase:

(a) Concentrations attributable to the increase in emissions from stationary sources which have converted from the use of petroleum products, natural gas, or both by reason of an order in effect under sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (15 USC 791 to 798) over the emissions from such sources before the effective date of such an order.

(b) Concentrations attributable to the increase in emissions from sources which have converted from using natural gas by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act (16 USC 791a to 828c) over the emissions from such sources before the effective date of the plan.

(c) Concentrations of particulate matter attributable to the increase in emissions from construction or other temporary emission-related activities of new or modified sources.

(d) The increase in concentrations attributable to new sources outside the United States over the concentrations attributable to existing sources which are included in the baseline concentration.

(e) Concentrations attributable to the temporary increase in emissions of sulfur dioxide, nitrogen dioxide or particulate matter from stationary sources which are affected by plan revisions approved by the administrator as meeting the criteria specified in sub. (4).

(2) No sources which have concentrations which are excluded from increment consumption under sub. (1) (a) and (b) may any longer have those concentrations excluded 5 years after the effective date of the order to which sub. (1) (a) refers or the plan to which sub. (1) (b) refers, whichever is applicable. If both such order and plan are applicable, no such exclusion may apply more than 5 years after the later of such effective dates.

(4) For purposes of excluding concentrations pursuant to sub. (1) (e), the administrator may approve a plan revision that:

(a) Specifies the time over which the temporary emissions increase of sulfur dioxide, nitrogen dioxide or particulate matter would occur. Such time is not to exceed 2 years in duration unless a longer time is approved by the administrator.

(b) Specifies that the time period for excluding certain contributions in accordance with par. (a) is not renewable.

(c) Allows no emissions increase from a stationary source which would do either of the following:

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13. Coke oven batteries.

14. Sulfur recovery plants.

15. Carbon black plants (furnace processes).

16. Primary lead smelters.

17. Fuel conversion plants.

18. Sintering plants.

19. Secondary metal production plants.

20. Chemical process plants.

21. Fossil fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input.

22. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels.

23. Taconite ore processing plants.

24. Glass fiber processing plants.

25. Charcoal production plants.

26. Fossil fuel fired steam electric plants of more than 250 million British thermal units per hour heat input.

27. Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act (42 USC 7411 or 7412).

(b) The major source or major modification is a portable stationary source which has previously received a permit under requirements in ss. NR 405.08 to 405.16 and all of the following conditions are met:

1. The source proposes to relocate and emissions of the source at the new location would be temporary.

2. The emissions from the source would not exceed its allowable emissions.

3. The emissions from the source would impact no Class I area and no area where an applicable increment is known to be violated.

4. Reasonable notice is given to the department prior to the relocation identifying the proposed new location and the probable duration of operation at the new location. Such notice shall be given to the department not less than 30 days in advance of the proposed relocation unless a different time duration is previously approved by the department.

(5) The requirements of ss. NR 405.08 to 405.16 do not apply to a major stationary source or major modification with respect to a particular air contaminant if the owner or operator demonstrates that, as to that air contaminant, the source or modification is located in an area designed as nonattainment under section 107 of the Act (42 USC 7407).

(6) The requirements contained in ss. NR 405.09, 405.11, and 405.13 do not apply to a proposed major stationary source or major modification with respect to a particular air contaminant, if the allowable emissions of that air contaminant from a new source, or the net emissions increase of that air contaminant from a modification, would be temporary and impact no Class I area and no area where an applicable increment is known to be violated.

(7) The requirements contained in ss. NR 405.09, 405.11, and 405.13 as they relate to any maximum allowable increase for a Class II area do not apply to a modification of a major stationary source that was in existence on March 1, 1978, if the net increase in allowable emissions of each air contaminant from the modification after the application of best available control technology would be less than 50 tons per year.

(8) The department may exempt a proposed major stationary source or major modification from the requirements of s. NR 405.11 with respect to monitoring for a particular air contaminant if one of the following applies:

(a) The emissions increase of the air contaminant from a new stationary source or the net emissions increase of the air contami-

nant from a major modification would cause, in any area, air quality impacts less than the following amounts:

- 1. Carbon monoxide 575 μg/m³, 8-hour average.
- 2. Nitrogen dioxide $14 \mu g/m^3$, annual average.
- 3. PM₁₀ 10 μg/m³, 24-hour average.

4. Sulfur dioxide — 13 μ g/m³, 24-hour average.

5. Ozone.

Note: No de minimis air quality level is provided for ozone. However, any source with a net increase of 100 tons per year or more of volatile organic compounds subject to regulation under this chapter would be required to perform an ambient impact analysis, including the gathering of ambient air quality data.

Lead — 0.10 μg/m³, 3—month average.

Mercury — 0.25 μg/m³, 24-hour average.

8. Beryllium - 0.0010 µg/m³, 24-hour average.

- 9. Fluorides 0.25 µg/m³, 24-hour average.
- 10. Vinyl chloride $15 \,\mu g/m^3$, 24-hour average.

11. Total reduced sulfur — $10 \,\mu\text{g/m}^3$, 1-hour average.

12. Hydrogen sulfide — $0.20 \,\mu\text{g/m}^3$, 1-hour average.

13. Reduced sulfur compounds $-10 \mu g/m^3$, 1-hour average.

(b) The concentrations of the air contaminant in the area that the source or modification would affect are less than the con-

centrations listed in par. (a).(c) The air contaminant is not listed in par. (a).

Note: The advance notice requirement for relocation of a portable source in the federal regulations (not less than 10 days advance notice) has been changed to not less than 30 days in sub. (4) (b).

than 30 days in sub. (4) (b). **History:** Cr. Register, January, 1987, No. 373, eff. 2–1–87, corrections in (6) to (8) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1988, No. 388; am. (8) (a) 3., Register, April, 1995, No. 472, eff. 5–1–95; am. (1), (4) (intro.), (5) and (6), Register, December, 1995, No. 480, eff. 1–1–96; am. (3), (5), (8) (intro.), (a) 6., 8, 12, renum. (4) (b) and (c) to be (4) (a) and (b) and am. (4) (a) 27., (b) (intro.), Register, December, 1996, No. 492, eff. 1–1–97; am. (8) (a) 9., Register, October, 1999, No. 526, eff. 11–1–99.

NR 405.08 Control technology review. (1) A major stationary source or major modification shall meet each applicable emissions limitation under chs. NR 400 to 499 and under sections 111 and 112 of the Act (42 USC 7411 and 7412).

(2) A new major stationary source shall apply best available control technology for each air contaminant that it would have the potential to emit in significant amounts.

(3) A major modification shall apply best available control technology for each air contaminant for which it would be a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the air contaminant would occur as a result of a physical change or change in the method of operation in the unit.

(4) For phased construction projects, the determination of best available control technology shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of best available control technology for the source.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; am. (1), Register, April. 1995, No. 472, eff. 5-1-95; am. (3), Register, December, 1995, No. 480, eff. 1-1-96.

NR 405.09 Source impact analysis. The owner or operator of the proposed major source or major modification shall demonstrate that allowable emission increases from the proposed major source or major modification, in conjunction with all other applicable emissions increases or reduction, including secondary emissions, would not cause or contribute to air pollution in violation of either of the following:

(1) Any national ambient air quality standard in any air quality control region.

(2) Any applicable maximum allowable increase over the baseline concentration in any area.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; am. (intro.), Register, December, 1996, No. 492, eff. 1-1-97.

NR 405.10 Air quality models. (1) All estimates of ambient concentrations required under this chapter shall be based on the applicable air quality models, data bases, and other requirements specified in the Guideline on Air Quality Models (Revised) in Appendix W of 40 CFR part 51, incorporated by reference in s. NR 484.04.

(2) Where an air quality impact model specified in the Guideline on Air Quality Models in Appendix W of 40 CFR part 51 is inappropriate, the model may be modified or another model substituted.

(3) A substitution or modification of a model shall be subject to the public comment procedures set forth in s. NR 405.15.

(4) Written approval of the administrator shall be obtained for any modification or substitution.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; am. (1) and (5), Register, April, 1988, No. 388, eff. 5-1-88; am. (1) and (5), r. (6), Register, May, 1992, No. 437, eff. 6-1-92; am. (1) to (3), r. (5), Register, April, 1995, No. 472, eff. 5-1-95; am. (4), Register, December, 1995, No. 480, eff. 1-1-96.

NR 405.11 Air quality analysis. (1) PREAPPLICATION ANALYSIS. (a) Any application for a permit under this chapter shall contain an analysis of ambient air quality in the area that the major stationary source or major modification would affect for each of the following air contaminants:

1. For the major source, each air contaminant that it would have the potential to emit in a significant amount.

2. For the major modification, each air contaminant for which it would result in a significant net emissions increase.

(b) For any air contaminant for which no national ambient air quality standard exists, the analysis shall contain such air quality monitoring data as the department determines is necessary to assess ambient air quality for that air contaminant in any area that the emissions of that air contaminant would affect.

(c) For any air contaminant for which a standard does exist, the analysis shall contain continuous air quality monitoring data gathered for purposes of determining whether emissions of that air contaminant would cause or contribute to a violation of the standard or any maximum allowable increase.

(d) In general, the continuous air monitoring data that is required shall be gathered over a period of one year and shall represent the year preceding receipt of the application, except that, if the department determines that a complete and adequate analysis can be accomplished with monitoring data gathered over a period shorter than one year (but not to be less than 4 months), the data that is required shall be gathered over at least that shorter period.

(e) The owner or operator of a proposed major stationary source or major modification of volatile organic compounds who satisfies all conditions of 40 CFR part 51, Appendix S, section IV, incorporated by reference in s. NR 484.04, may provide post-approval monitoring data for ozone in lieu of providing preconstruction data as required under this section.

(2) POST-CONSTRUCTION MONITORING. The owner or operator of a major stationary source or major modification shall, after construction of the stationary source or modification, conduct such ambient monitoring as the department determines is necessary to determine the effect emissions from the stationary source or modification may have, or are having, on air quality in any area.

(3) OPERATION OF MONITORING STATIONS. The owner or operator of a major stationary source or a major modification shall meet the requirements of Appendix B to 40 CFR part 58, incorporated by reference in s. NR 484.04, during the operation of monitoring stations for purposes of satisfying this section.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; am. (1) (b), (c), (e) and (3), r. (4), Register, May, 1992, No. 437, eff. 6-1-92; am. (1) (e) and (3), Register, December, 1995, No. 480, eff. 1-1-96.

NR 405.12 Source information. (1) The owner or operator of a proposed major source or major modification shall submit all information necessary to perform any analysis or make any determination required under procedures established in accordance with this chapter.

(2) Such information shall include:

(a) A description of the nature, location, design capacity, and typical operating schedule of the major source or major modification, including specifications and drawings showing its design and plant layout.

(b) A detailed schedule for construction of the major source or major modification.

(c) A detailed description as to what system of continuous emission reduction is planned by the major source or major modification, emission estimates, and any other information as necessary to determine that best available control technology as applicable would be applied.

(3) The owner or operator shall also provide information on all of the following:

(a) The air quality impact of the major source or major modification, including meteorological and topographical data necessary to estimate such impact.

(b) The air quality impacts and the nature and extent of any or all general, commercial, residential, industrial and other growth which has occurred since August 7, 1977, in the area the major source or major modification would affect.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; am. (3) (intro.). Register, December, 1996, No. 492, eff. 1-1-97.

NR 405.13 Additional impact analyses. (1) The owner or operator shall provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the major source or major modification and general commercial, residential, industrial and other growth associated with the major source or major modification. The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value.

(2) The owner or operator shall provide an analysis of the air quality impact projected for the area as a result of general, commercial, residential, industrial and other growth associated with the major source or major modification.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87.

NR 405.14 Sources impacting federal Class I areas — additional requirements. (1) NOTICE TO EPA. The department shall transmit to the administrator a copy of each permit application relating to a major stationary source or major modification and provide notice to the administrator of every action related to the consideration of such permit.

(2) FEDERAL LAND MANAGER. The federal land manager and the federal official charged with direct responsibility for management of Class I lands have an affirmative responsibility to protect the air quality related values (including visibility) of any such lands and to consider, in consultation with the administrator, whether a proposed source or modification would have an adverse impact on such values.

(3) DENIAL — IMPACT ON AIR QUALITY RELATED VALUES. The department shall allow the federal land manager of any Class I lands the opportunity to present to the department after the department's preliminary determination required under procedures developed in accordance with s. NR 405.16, a demonstration that the emissions from the proposed major source or major modification would have an adverse impact on the air quality related values (including visibility) of any federal mandatory Class I lands, notwithstanding that the change in air quality resulting from emissions from such source or modification would not cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the department concurs with such demonstration, the permit may not be issued.

Filed: 02/11/2013



(Slip Opinion)

NOTICE: This opinion is subject to formal revision before publication in the Environmental Administrative Decisions (E.A.D.). Readers are requested to notify the Environmental Appeals Board, U.S. Environmental Protection Agency, Washington, D.C. 20460, of any typographical or other formal errors, in order that corrections may be made before publication.

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

)

In re:

Northern Michigan University Ripley Heating Plant PSD Appeal No. 08-02

Permit No. 60-07

[Decided February 18, 2009]

ORDER DENYING REVIEW IN PART AND REMANDING IN PART

Before Environmental Appeals Judges Edward E. Reich, Charles J. Sheehan, and Anna L. Wolgast.

PSD Appeal No. 08-02

ORDER DENYING REVIEW IN PART AND REMANDING IN PART

Decided February 18, 2009

Syllabus

On May 12, 2008, the Michigan Department of Environmental Quality ("MDEQ" or "Department") issued a federal prevention of significant deterioration ("PSD") permit to Northern Michigan University ("NMU"), pursuant to Clean Air Act § 165, 42 U.S.C. § 7475. The permit authorizes NMU to construct a new circulating fluidized bed ("CFB") boiler at the Ripley Heating Plant on its campus in Marquette, Michigan. As permitted, the CFB boiler will function as a cogeneration unit that provides both electrical power and heat to NMU's facilities through the burning of wood, coal, and natural gas.

On June 13, 2008, Sierra Club filed a petition for review of this PSD permit pursuant to 40 C.F.R. part 124. In so doing, Sierra Club challenged a number of MDEQ's decisions and responses to comments pertaining to Best Available Control Technology ("BACT") requirements for the boiler's emissions of sulfur dioxide ("SO₂"), fine particulate matter ("PM_{2 5}"), carbon dioxide ("CO₂"), and nitrous oxide ("N₂O"). Sierra Club also challenged several aspects of the air quality analysis for the boiler, including the Department's calculation of PSD increment consumed by other emissions sources, its alleged failure to account in the air quality modeling for the CFB boiler's worst case emissions, its refusal to require site specific preconstruction monitoring, and its use of certain criteria to excuse analysis of impacts to "Class I" wilderness and wildlife areas.

Held: The Environmental Appeals Board ("Board") remands certain issues raised in Sierra Club's petition for review and denies review as to the remaining issues.

<u>SO₂ BACT</u>. The Board holds that MDEQ clearly erred in selecting BACT limits for the proposed boiler's emissions of SO₂. The Board finds that in analyzing this issue, MDEQ failed to follow the U.S. Environmental Protection Agency's ("Agency") New Source Review Manual or any other method faithful to statutory and regulatory guidelines. The Board finds that, instead, the Department prematurely narrowed the focus of its BACT analysis to a combination of minimal wood burning and predominant use of coal from two local power plants. In so doing, MDEQ failed to provide in the

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record the necessary threads of logic or data to sustain these fuel choices as requiring NMU to achieve emissions limitations clean enough to be BACT. The Board also rejects MDEQ's contention that requiring NMU to burn coal from sources other than the two identified local power plants would "redefine the source," holding that the record fails to sustain such a claim. Accordingly, the Board remands the permit to MDEQ to reconsider the BACT limitations chosen for SO₂ emissions from the CFB boiler.

<u>BACT for PM</u>₂₅. The Board finds no clear error, abuse of discretion, or other basis for granting review of MDEQ's decision to substitute an alternative particulate matter BACT analysis for the requisite PM_{25} BACT analysis, pursuant to the Agency's so called "surrogate policy."

<u>BACT for Greenhouse Gases CO₂ and N₂O</u>. The Board remands the permit for MDEQ to analyze whether CO₂ and N₂O emissions from the CFB boiler should be limited pursuant to BACT. The Board directs MDEQ to be guided by its recent decision in *In re Deseret Power Electric Cooperative*, PSD Appeal No. 07 03 (EAB Nov. 13, 2008), 14 E.A.D.

<u>PSD Increments</u>. The Board remands the permit for MDEQ to reevaluate and clarify its analysis of PSD increment consumption/expansion in the area affected by proposed CFB boiler emissions. In so doing, the Board rejects Sierra Club's argument that the "plain language" of the statute and regulations require that *all* the emissions from a source that undergoes a major modification after an applicable "baseline" date must be treated as increment consuming. Rather, the Board holds that, under the statute, regulations, and long standing Agency interpretation, pre baseline emissions of a source modified after the baseline date remain as part of the baseline concentration, and only the post baseline change in emissions from the modified source, whether upward or downward, is factored into the PSD increment consumption/expansion calculus.

<u>Modeling of Worst Case Emissions</u>. The Board remands the permit so that MDEQ can ensure that the source impact modeling analyses for SO_2 , particulate matter, nitrogen oxide, and carbon monoxide are conducted on the basis of the maximum, "worst case" emissions rates of those pollutants. The Board finds that the Department failed to adequately document this analytical step in the record or meaningfully respond to significant comments questioning the modeling inputs.

<u>Preconstruction Monitoring</u>. The Board remands the permit for MDEQ to reevaluate the issue of preconstruction monitoring and explain, in the record, how its ultimate decisions on this topic comply with the applicable provisions of the statute and regulations and reflect Agency guidance. In so holding, the Board rejects Sierra Club's argument that the "plain language" of the statute and regulations mandate the use of site specific, sole purpose preconstruction ambient air quality data. The Board holds that such an argument overlooks explicit statements of congressional intent allowing the use of alternative data, and long established Agency guidelines implementing that intent.

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<u>Class I Increment Analysis</u>. Finally, the Board holds that MDEQ adequately addressed concerns about protecting air quality at national parks and wilderness areas that might be affected by emissions from NMU's new boiler. The Board denies review on this ground.

Before Environmental Appeals Judges Edward E. Reich, Charles J. Sheehan, and Anna L. Wolgast.

Opinion of the Board by Judge Sheehan:

On May 12, 2008, the Michigan Department of Environmental Quality ("MDEQ" or "Department") issued a federal prevention of significant deterioration ("PSD") permit to Northern Michigan University ("NMU" or "University"), pursuant to Clean Air Act § 165, 42 U.S.C. § 7475. The permit authorizes NMU to construct a new circulating fluidized bed ("CFB") boiler at the Ripley Heating Plant on the University's campus in Marquette, Michigan. As permitted, the CFB boiler will function as a cogeneration unit that provides both electrical power and heat to NMU's facilities through the burning of wood, coal, and natural gas. On June 13, 2008, Sierra Club filed a petition for review of this PSD permit pursuant to 40 C.F.R. part 124, requesting on a number of grounds that the permit be remanded to MDEQ for further consideration. For the reasons set forth below, the Environmental Appeals Board ("Board") remands certain issues raised in Sierra Club's petition for review and denies review as to the remaining issues.1

¹ MDEQ is authorized to administer the PSD permitting program within the State of Michigan pursuant to a delegation agreement with Region 5 of the U.S. Environmental Protection Agency. *See* 40 C.F.R. § 52.21(u); 45 Fed. Reg. 8348 (Feb. 7, 1980). In accordance with the delegation agreement and applicable regulations, MDEQ issued PSD permit decisions are considered for procedural purposes to be federally issued PSD permit decisions. *See* 40 C.F.R. § 124.41 (the terms "EPA" and "Regional Administrator" mean the delegate agency and its head, respectively, when a state exercises delegated authority to administer the PSD permit program); 45 Fed. Reg. 33,290, 33,413 (May 19, 1980) ("For the purposes of Part 124, a delegate [s]tate stands in the shoes of the Regional Administrator. Like the Regional Administrator, the delegate must follow the procedural requirements of part 124. *** A permit issued by a delegate (continued...)

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I. BACKGROUND

A. Statutory and Regulatory Background

In 1977, Congress enacted the PSD provisions of the Clean Air Act ("CAA" or "Act") with a number of specific goals in mind. Among other things, Congress intended "to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources." CAA § 160(3), 42 U.S.C. § 7470(3). Congress also intended "to assure that any decision to permit increased air pollution in any area to which this section applies is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process." CAA § 160(5), 42 U.S.C. § 7470(5).

Toward these ends, Congress established a PSD permitting program that is applicable in areas of the country deemed to be in "attainment" or "unclassifiable" with respect to federal air quality standards called "national ambient air quality standards," or "NAAQS." *See* CAA §§ 161, 165, 42 U.S.C. §§ 7471, 7475. Congress charged the U.S. Environmental Protection Agency ("EPA" or "Agency") with developing NAAQS for air pollutants whose presence in the atmosphere above certain concentration levels could "reasonably be anticipated to endanger public health and welfare." CAA § 108(a)(1)(A), 42 U.S.C. § 7408(a)(1)(A); *see* CAA § 109, 42 U.S.C. § 7409. To date, EPA has promulgated NAAQS for six air contaminants: (1) sulfur oxides

¹(...continued)

is still an 'EPA issued permit.'"). Consequently, appeals of MDEQ's PSD permit decisions are required to be brought pursuant to 40 C.F.R. § 124.19 and heard by EPA's Environmental Appeals Board. *See, e.g., In re Hillman Power Co.,* 10 E.A.D. 673, 675 (EAB 2002); *In re Gen. Motors, Inc.,* 10 E.A.D. 360, 362 & n.2 (EAB 2002); *In re Tondu Energy Co.,* 9 E.A.D. 710, 711 12 n.1 (EAB 2001); *In re Indeck Niles Energy Ctr.,* PSD Appeal No. 04 01, at 1 (EAB Sept. 30, 2004) (Order Denying Review); *In re Tallmadge Generating Station,* PSD Appeal No. 02 12, at 1 (EAB May 21, 2003) (Order Denying Review in Part and Remanding in Part); *In re Select Steel Corp. of Am.,* PSD Appeal No. 98 21, at 1 n.1 (EAB Sept. 11, 1998) (Order Denying Review).

(measured as sulfur dioxide ("SO₂")); (2) particulate matter (measured as "PM₁₀," denoting particulates 10 micrometers or less in diameter, or as "PM_{2.5}," denoting particulates 2.5 micrometers or less in diameter);² (3) carbon monoxide ("CO"); (4) ozone (measured as volatile organic compounds ("VOCs") or as nitrogen oxides ("NO_x")); (5) nitrogen dioxide ("NO₂"); and (6) lead. 40 C.F.R. §§ 50.4-.12.

In geographical areas deemed to be in "attainment" for any of these pollutants, the ambient air quality meets the NAAQS for that pollutant. CAA § 107(d)(1)(A)(ii), 42 U.S.C. § 7407(d)(1)(A)(ii). In areas designated "unclassifiable," air quality 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). Areas may also be designated as "nonattainment," meaning that the concentration of a pollutant in the ambient air does not meet the NAAQS for that pollutant. CAA § 107(d)(1)(A)(i), 42 U.S.C. § 7407(d)(1)(A)(i). The PSD program is not applicable, however, in nonattainment areas. *See* CAA § 161, 42 U.S.C. § 7471.

Parties that wish to construct "major emitting facilities"³ in attainment or unclassifiable areas must obtain preconstruction approval,

² "Particulate matter" 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." National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,653 (July 18, 1997). As noted above, particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as "PM₁₀." *Id.* at 38,653 n.1; *see* 40 C.F.R. § 50.6(c). PM₁₀ is comprised of two principal fractions, referred to as "fine" and "coarse" particulate matter. 62 Fed. Reg. at 38,654. Fine particulate matter, labeled "PM_{2.5}," has an aerodynamic diameter of 2.5 micrometers or less, while coarse particulate matter has an aerodynamic diameter greater than 2.5 but less than or equal to 10 micrometers. *Id.* nn.5 6; *see* 40 C.F.R. § 50.7(a). EPA has promulgated separate NAAQS for PM₁₀ and PM_{2.5}. *See* 40 C.F.R. § 50.6.7.

³ A "major emitting facility" is a stationary source in any of certain listed stationary source categories that, in new or modified form, emits or has the potential to emit 100 tons per year ("tpy") or more of any air pollutant, or any other new or modified stationary source that has the potential to emit 250 tpy or more of any air pollutant. *See* CAA § 169(1), (2)(C), 42 U.S.C. § 7479(1), (2)(C).

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in the form of PSD permits, to build such facilities. CAA § 165, 42 U.S.C. § 7475. Applicants for these permits must achieve emissions limits established by the "best available control technology," or "BACT," for pollutants emitted from their facilities in amounts greater than applicable levels of significance.⁴ CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(b)(23), (j)(2)-(3). Applicants also must demonstrate, through analyses of the anticipated air quality impacts associated with their proposed facilities, that their facilities' emissions will not cause or contribute to an exceedance of any applicable air quality standard or related criterion. *See* CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3) (listing three categories of compliance standards); 40 C.F.R. § 52.21(k)-(m).

B. Factual and Procedural Background

On February 5, 2007, NMU filed an application with MDEQ for permission to construct a new CFB boiler on its campus near Lake Superior in Michigan's Upper Peninsula. See Petition for Review Ex. 4 (NTH Consultants, Ltd., Permit to Install Application for a Circulating Fluidized Bed (CFB) Boiler at Northern Michigan University (Feb. 5, 2007)) ("Permit Appl."). The boiler, which will include a steam turbine, generator, and associated equipment, is designed to serve as a cogeneration unit that provides 120,000 pounds of steam per hour and ten megawatts of electrical power to NMU's facilities. Permit Appl. § 2.0, at 3; Petition for Review Ex. 5 (MDEQ, Public Participation Documents for Northern Michigan University Ripley Heating Plant: Fact Sheet 1 (Oct. 19, 2007)) ("Fact Sheet"). By proposing this project, NMU hopes to expand the reliability and efficiency of its existing powerhouse

⁴ The level of significance is, for example, 100 tpy for CO, 40 tpy for NO_x, 40 tpy for SO₂, 25 tpy for total particulate matter, and 15 tpy for PM₁₀. 40 C.F.R. § 52.21(b)(23)(i) (listing various air pollutants and levels of emissions deemed "significant"). The level of significance for any other pollutant "regulated under the Act" but not listed in 40 C.F.R. § 52.21(b)(23)(i) is "any emissions rate." *Id.* § 52.21(b)(23)(ii).

operations, which are conducted out of the Ripley Heating Plant on the north end of campus.⁵ Fact Sheet at 1.

At present, the Ripley Heating Plant is comprised of three natural gas- and No. 2 fuel oil-fired boilers, the oldest of which has been in operation since 1967, along with emissions control equipment and associated infrastructure. *See id.*; Permit Appl. § 6.2, at 57 & app. A (site drawings). NMU plans to construct the CFB boiler in a new building immediately adjacent to the building housing the three existing boilers. Permit Appl. § 2.0, 6.2, at 3, 57; Fact Sheet at 1. The new boiler, unlike the older ones, will be designed to burn solid fuels, including bituminous and subbituminous coals and wood. Permit Appl. § 2.1, at 3; *see* Fact Sheet at 1. The boiler will also be designed to combust natural gas, which NMU proposes to use during boiler startup operations and as a backup fuel when neither coal nor wood is available. Permit Appl. § 2.1, at 3.

NMU plans to obtain coal exclusively from two "nearby" utilities: (1) the Marquette Board of Light and Power ("Marquette"); and (2) We Energies' Presque Isle Power Plant ("Presque Isle"). *Id.*; Fact Sheet at 2. The University also plans to obtain wood from independent suppliers and pipeline-quality natural gas from its campus natural gas supplier. Permit Appl. § 2.1, at 3; Fact Sheet at 2. NMU has arranged for shipments of the solid fuels to arrive by truck every day on average, except weekends, with a typical shipment consisting of forty tons of coal "and/or" forty tons of wood. Permit Appl. §§ 2.2, 2.2.1, at 4. The University plans to construct silos to hold a three-day supply of the coal and/or wood fuels, which will allow boiler operation through weekends and holidays.⁶ *Id.* § 2.2, at 4. NMU projects that the annual maximum deliveries of solid fuels for the

⁵ While not discussed in the administrative record, NMU indicates that there is another motive driving its new boiler proposal: namely, avoidance of \$1 million or more annually in heating and electricity costs. Intervenor Northern Michigan University's Brief in Response to Petition [Corrected] 3 (Sept. 23, 2008).

⁶ As discussed *infra* note 22 and accompanying text, MDEQ's representation at oral argument was at variance from this record, asserting that there will be three days' storage space for each fuel.

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boiler will be in the range of "68,669 tons of bituminous coal, 95,329 tons of [Powder River Basin] coal, and 199,533 tons of wood." *Id.* § 2.2.1, at 4.

NMU's proposed installation of a new CFB boiler at the Ripley Heating Plant is considered a "major modification" that will result in a significant net increase in emissions of SO₂, PM₁₀, CO, and NO_x from the facility. *See* Permit Appl. §§ 4.1 tbl. 4-1, 5.0, 6.0, at 24, 33, 51-52 (three existing boilers' potential to emit SO₂, PM₁₀, CO, and NO_x is limited by permit to 99.9 tpy for each pollutant, while projected emissions from the new CFB boiler are 388.9 tpy of SO₂, 26.9 tpy of PM₁₀, 152.6 tpy of CO, and 89.8 tpy of NO_x); 40 C.F.R. § 52.21(b)(23)(i) (net emissions increase levels deemed "significant" are 40 tpy for SO₂, 15 tpy for PM₁₀, 100 tpy for CO, and 40 tpy for NO_x). Moreover, the University is located within Marquette County, Michigan, an area designated as attainment or unclassifiable for SO₂, CO, ozone, PM₁₀, and NO₂. *See* 40 C.F.R. § 81.323 (Michigan air quality status). Accordingly, PSD compliance is required under federal law.

MDEQ reviewed NMU's application for a PSD permit, which included BACT and air quality analyses for the CFB boiler. See, e.g., Response of MDEQ Ex. 7 (MDEQ, Permit Evaluation Form: Northern Michigan University (2007)) ("Permit Eval. Form"); id. Ex. 9 (MDEQ, *Air Dispersion Analysis Summary, NMU – Ripley Heating Plant* (May 8, 2007)). Upon examination of a proposed SO_2 emissions limit of 0.2 pounds per million British Thermal Units ("lb/MMBtu") of heat input, MDEQ determined that a lower BACT limit might be within reach of the boiler, so the Department requested an additional BACT analysis from NMU. Permit Eval. Form at 3. NMU complied with the Department's request by submitting a permit application addendum on September 18, See Letter from Jeffrey P. Jaros, Project Manager, NTH 2007. Consultants, Inc., to David Riddle, Senior Environmental Engineer, MDEQ, Addendum to Application No. 60-07 to Update SO, Emission Limit, Northern Michigan University – Ripley Heating Plant (Sept. 18, 2007) ("Permit Appl. Add.").

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On October 19, 2007, MDEQ issued a draft PSD permit containing proposed terms and conditions to regulate the CFB boiler. That same day, the Department published a notice inviting public comment on the draft permit and establishing a comment period, which ran through December 27, 2007. On November 27, 2007, MDEQ held a public hearing on the draft permit at the Marquette City Hall. The Department accepted numerous oral and written comments on the draft permit from interested individuals and organizations, including Sierra Club. See, e.g., Petition for Review Ex. 2 (Letter from David C. Bender & Bruce E. Nilles, Sierra Club, to William Presson, MDEQ (Dec. 24, 2007)) ("SC Cmts."). On May 12, 2008, after reviewing the public comments on the draft permit, MDEQ issued a document responding to the comments, along with a final PSD permit authorizing NMU's construction of the CFB boiler. See id. Ex. 6 (MDEQ, Response to Comments Document for PSD Permit No. 60-07, Northern Michigan University, Ripley Heating Plant (May 12, 2008)) ("RTC Doc."); id. Ex. 1 (MDEQ, Permit to Install No. 60-07 (May 12, 2008)) ("Permit").

On June 13, 2008, Sierra Club filed PSD Appeal No. 08-02 with this Board. See Petition for Review and Request for Oral Argument (June 13, 2008) ("Pet'n"). At the request of the Board, and after a granted motion for an extension, MDEQ submitted a response to the merits of the petition for review on August 5, 2008. See Response of the Michigan Department of Environmental Quality (Aug. 5, 2008) ("MDEQ Resp."). On August 21, 2008, by leave of the Board, Sierra Club filed a reply to MDEQ's response. See Petitioner's Reply Brief (Aug. 21, 2008) ("Reply to MDEQ"). On September 5, 2008, NMU filed a motion to intervene as a party, which the Board granted, and, on September 23, 2008, the University filed a corrected response to Sierra Club's petition. See Intervenor Northern Michigan University's Brief in Response to Petition [Corrected] (Sept. 23, 2008) ("NMU Resp."). Sierra Club then sought and received permission to file a reply to NMU's response, which the Board accepted as filed on October 3, 2008, after Sierra Club sought leniency for an out-of-time filing. See Sierra Club's Reply to Intervenor Northern Michigan University's Brief in Response to Petition (Oct. 3, 2008) ("Reply to NMU"). On October 22, 2008, the Board heard oral

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argument in this dispute. *See* Oral Argument Transcript (Oct. 22, 2008) ("OA Tr."). The case now stands ready for decision by the Board.

II. DISCUSSION

Under the rules governing this proceeding, a PSD permit ordinarily will not be reviewed unless it is based on a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review. *See* 40 C.F.R. § 124.19(a); 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). The Board's analysis of PSD permits is guided by the preamble to section 124.19, which states that the Board's power of review "should be only sparingly exercised" and that "most permit conditions should be finally determined at the [permit issuer's] level." 45 Fed. Reg. at 33,412; *accord In re Cardinal FG Co.*, 12 E.A.D. 153, 160 (EAB 2005). The burden of demonstrating that review is warranted rests with the petitioner, who must raise objections to the permit and explain why the permit issuer's previous response to those objections is clearly erroneous or otherwise warrants review. *In re BP Cherry Point*, 12 E.A.D. 209, 217 (EAB 2005); *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 744 (EAB 2001).

The question presently before the Board is whether Sierra Club has made a sufficient showing that any condition of the PSD permit is clearly erroneous or involves an important matter of policy or exercise of discretion warranting review. In its petition, Sierra Club begins by challenging MDEQ's decisions regarding BACT requirements for SO₂, PM_{2.5}, carbon dioxide, and nitrous oxide emissions from the CFB boiler. We address each of these matters in Parts II.A.1-.4 below. Sierra Club then raises a series of challenges to MDEQ's air quality analysis for this permit.⁷ We address these matters in Parts II.B.1-.4 below.

⁷ Sierra Club also argued that MDEQ erred in its treatment of several matters pertaining to boiler startup, shutdown, and malfunction ("SSM"). See Pet'n at 38 39 (alleging failure to ensure SSM plan received appropriate public notice and comment), 42 43 (alleging failure to model potential uncontrolled emissions during SSM periods). Sierra Club withdrew these elements of its appeal after receiving clarification of SSM (continued...)

A. BACT Issues

1. Introduction

As noted above, NMU proposes a new solid fuel-fired CFB boiler near its Ripley Heating Plant. "In support of the Governor's 21st Century Energy Plan," the boiler is "designed to allow operation on Renewable Resources (specifically wood chips) up to 100% of the total heat input." Letter from Michael G. Hellman, Facilities Specialist/Planner, NMU, to Mary Ann Dolehanty, MDEQ 1 (Feb. 5, 2007) (permit application cover letter). This "preference" for renewable resources, however, yields to coal and natural gas if renewable resources are unavailable or not economically feasible. *Id*. The result, notwithstanding NMU's stated intention as late as its permit application addendum that wood be the "primary fuel," Permit Appl. Add. at 1, is a permit allowing coal burning over twenty-two days per month. Fact Sheet at 4.

2. Overview of Legal Requirements

As mentioned in Part I.A above, the Act and Agency PSD regulations make major new stationary sources and major modifications, such as the NMU facility, subject to BACT for emissions of certain pollutants. CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2). The BACT requirement is defined as follows:

[BACT] means an emissions 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

⁷(...continued)

matters in MDEQ's response to the petition. Reply to MDEQ at 20 21, 22 & n.10; *see* MDEQ Resp. at 17 18. For this reason, we do not address SSM issues further.

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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); *accord* 40 C.F.R. § 52.21(b)(12) (similar regulatory definition of BACT).

This high threshold demands corresponding exertions from permitting authorities. Proceeding "on a case-by-case basis," CAA § 169(3), 42 U.S.C. § 7479(3), taking a "careful and detailed" look, *In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005), attentive to the "technology or methods appropriate for the particular facility," *In re Prairie State Generating Co.*, PSD Appeal No. 05-05, slip op. at 15 (EAB Aug. 24, 2006), 13 E.A.D. , *aff'd sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007), they are to seek the result "tailor-made" for that facility and that pollutant. *In re CertainTeed Corp.*, 1 E.A.D. 743, 747 (Adm'r 1982), *cited in, e.g., In re Christian County Generation, LLC*, PSD Appeal No. 07-01, slip op. at 8 (EAB Jan. 28, 2008), 13 E.A.D. ; *In re Three Mountain Power, LLC*, 10 E.A.D. 39, 47 (EAB 2001).

The analytical rigor demanded by Congress has found widely adopted expression in a guidance manual issued by EPA's Office of Air Quality Planning and Standards in 1990. *See generally* Office of Air Quality Planning & Standards, U.S. EPA, *New Source Review Workshop Manual* (draft Oct. 1990) ("NSR Manual"). While not binding Agency regulation or the required vehicle for making a BACT determination, *Prairie State*, slip op. at 16, 13 E.A.D. at the NSR Manual offers the "careful and detailed analysis of [BACT] criteria" required by the CAA and regulations. *Cardinal*, 12 E.A.D at 162. For this reason, it has guided state and federal permitting authorities on PSD requirements and policy for many years.⁸ *E.g., In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 183

⁸ In 2007, EPA reaffirmed the viability of the NSR Manual for guiding BACT analyses. 72 Fed. Reg. 31,372, 31,380 (June 6, 2007) ("it remains EPA's policy to use (continued...)

(EAB 2000) ("[t]his top-down analysis is not a mandatory methodology, but it is frequently used by permitting authorities to ensure that a defensible BACT determination, involving consideration of all requisite statutory and regulatory criteria, is reached"); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 129 n.14, 134 n.25 (EAB 1999) (same). The Board has commonly used it as a touchstone for Agency thinking on PSD issues. *E.g., In re Deseret Power Elec. Coop.*, PSD Appeal No. 07-03, slip op. at 11 n.7 (EAB Nov. 13, 2008), 14 E.A.D. ; *In re Indeck-Elwood, LLC*, PSD Appeal No. 03-04, slip op. at 10 n.13, 45-46 & n.65 (EAB Sept. 27, 2006), 13 E.A.D.

The NSR Manual's "top-down" method is simply stated: assemble all available control technologies, rank them in order of control effectiveness, and select the best. So fixed is the focus on identifying the "top," or most stringent alternative, that the analysis presumptively ends there and the top option selected – "unless" technical considerations lead to the conclusion that the top option is not "achievable" in that specific case, or energy, environmental, or economic impacts justify a conclusion that use of the top option is inappropriate. NSR Manual at B.2, .7-.8, .24, .26. In those events, remaining options are then reranked, the several factors applied, and so on until a "best" technology emerges out of this winnowing process.⁹

⁸(...continued)

the five step, top down process [set forth in the NSR Manual] to satisfy the [BACT] requirements when PSD permits are issued by EPA and delegated permitting authorities").

⁹ As a general matter, the Board will not fault a BACT analysis simply for deviating from the NSR Manual's five step structure. We will, however, carefully examine each analysis to ensure a defensible BACT determination that reflects consideration of all relevant statutory and regulatory criteria in the PSD permitting program. *See, e.g., In re ConocoPhillips Co.*, PSD Appeal No. 07 02, slip op. at 28 36 (EAB June 2, 2008), 13 E.A.D. (remanding BACT determination for petroleum refinery flare CO emissions due to lack of adequate analysis establishing that permit issuer considered all relevant statutory and regulatory criteria); *Knauf*, 8 E.A.D. at 134 44 (remanding BACT analysis conducted for fiberglass plant's emissions of PM₁₀ because (continued...)

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More specifically, the top-down method unfolds over five steps. *E.g.*, NSR Manual at B.5-.9; *see Prairie State*, slip op. at 17-18, 13 E.A.D. at (summarizing steps). The first step requires the permitting authority to identify all "potentially" available control options. NSR Manual at B.5. Available control options are those technologies, including the application of production processes or innovative technologies, that have "a practical potential for application to the emissions unit and the regulated pollutant under evaluation," *id.*, including technology required under the lowest achievable emission rate ("LAER").¹⁰ *Id.* at B.10-.17; *see*, *e.g.*, *Prairie State*, slip op. at 19-37, 13 E.A.D. at (applying step one analysis); *Steel Dynamics*, 9 E.A.D. at 183-86 (evaluating challenge to permit issuer's step one analysis).

The second step eliminates "technically infeasible" options from the potentially available options. NSR Manual at B.7. This involves first determining for each technology whether it is "demonstrated," i.e., installed and operated successfully elsewhere on a similar facility, or, if not demonstrated, whether it is both "available" and "applicable."¹¹ *Id*. at B.17-.22. Technologies identified in step one as "potentially"

⁹(...continued)

explanations of competing control options and other technical matters were insufficiently detailed to demonstrate compliance with PSD program requirements).

¹⁰ The LAER requirement provides that all affected sources must comply with either the most stringent limit contained in a state implementation plan or the most stringent emission limit achieved in practice, whichever is more stringent. In contrast, under BACT, consideration of energy, environmental, or economic impacts may justify a lesser degree of control. *Compare* 40 C.F.R. § 52.21(b)(12) (definition of BACT) with *id.* §§ 51.165(a)(1)(xiii), .166(b)(52) (definition of LAER). The NSR Manual suggests that LAER determinations "are available for BACT purposes and must also be included as control alternatives" during step one of the BACT analysis and "usually represent the top alternative." NSR Manual at B.5.

¹¹ According to the NSR Manual, a technology is considered "available" if it "can be obtained by the applicant through commercial channels or is otherwise available within the common sense meaning of the term." NSR Manual at B.17. An "available" technology is considered "applicable" if it "can reasonably be installed and operated on the source type under consideration." *Id*.

available, but neither demonstrated nor found to be both available and applicable, are eliminated under step two from further analysis. *Id.; see*, *e.g., Prairie State*, slip op. at 44-49, 13 E.A.D. at (evaluating step two analysis); *Cardinal*, 12 E.A.D. at 163-68; *Steel Dynamics*, 9 E.A.D. at 199-202; *In re Maui Elec. Co.*, 8 E.A.D. 1, 13-16 (EAB 1998).

In step three, remaining control technologies are ranked and then listed in order of control effectiveness for the pollutant under review, with the most effective alternative at the top. NSR Manual at B.7. A step three analysis includes making determinations about comparative control efficiencies among control techniques employing different emission performance levels and different units of measure of their effectiveness. *Id.* at B.22-.26; *see*, *e.g.*, *In re Newmont Nev. Energy Inv.*, *LLC*, 12 E.A.D. 429, 459-64 (EAB 2005) (evaluating challenge to step three analysis).

In the fourth step, energy, environmental, and economic impacts are considered and the top alternative is either confirmed as appropriate or is determined to be inappropriate. NSR Manual at B.8-.9, .26-.53. The cost effectiveness of the alternative technologies is considered under this step. *Id.* at B.31-.46. Step four thus validates the suitability of the top control option identified or provides a clear justification as to why the top control option should not be selected as BACT. *Id.* at B.26; *see, e.g., Prairie State*, slip op. at 49-66, 13 E.A.D. at (applying step four analysis; evaluating all three collateral impacts); *Three Mountain Power*, 10 E.A.D. at 56-59 (evaluating environmental impacts); *Steel Dynamics*, 9 E.A.D. at 202-07, 212-13 (evaluating economic impacts).

Finally, under step five, the most effective control alternative not eliminated in step four is selected and the permit issuer sets as BACT an emissions limit for a specific pollutant that is appropriate for the selected control method. NSR Manual at B.53-.54; *see*, *e.g.*, *Prairie State*, slip op. at 67-112, 13 E.A.D. at (step five analysis).

The NSR Manual thus exacts thoughtful, substantial efforts by reviewing authorities. Not merely an option-gathering exercise with casually considered choices, the NSR Manual or any BACT analysis calls

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for a searching review of industry practices and control options, a careful ranking of alternatives, and a final choice able to stand as first and best. If reviewing authorities let slip their rigorous look at "all" appropriate technologies, if the target ever eases from the "maximum degree of reduction" available to something less or more convenient, the result may be somewhat protective, may be superior to some pollution control elsewhere, but it will not be BACT.

3. MDEQ's BACT Analysis

The greater part of Sierra Club's challenge centers on particular BACT issues. We take up each in turn. But with conformity to federal standards the central question, and with NMU and MDEQ having chosen to rely on a state document purporting to guide them through their BACT responsibilities, *see* Permit Appl. § 5.1, at 33, we first briefly assess those state procedures.

a. General Conformity with Clean Air Act and Federal Guidelines

The alignment between the NSR Manual and NMU's BACT analysis, as approved by MDEQ, is, at best, imperfect. The permit application itself commences with inconsistent objectives, the first paragraph assuring that NMU performed the review "in accordance with the U.S. EPA's recommended top-down procedure outlined in the [NSR Manual]," Permit Appl. § 5.0, at 33, the second apparently quite the opposite – that the review follows a "more streamlined analysis by circumventing the rigorous approach set forth in the [NSR Manual]." *Id.* § 5.1, at 33.

The "more streamlined" procedure is MDEQ's "Operational Memorandum No. 20." *See* Air Quality Division, MDEQ, *Operational Memorandum No. 20: Best Available Control Technology (BACT) Determinations* (Aug. 24, 2005) ("State Manual"). Even brief examination shows it to run largely against the current of EPA's NSR Manual. The latter's tenet of settling on the "top" technology – "unless"

that technology's achievement is demonstrably not possible, in which case additional reviews run until an achievable "best" is identified, NSR Manual at B.2-appears in the State Manual to transform into a four-level series of generally downward slips, away from the "top" control.¹²

Alignment with the NSR Manual appears to occur in Level 4, which liberally paraphrases the Manual's five steps in its opening words.¹³ State Manual at 4. But the comparison fades with the State Manual's suggestion that their "best interests" usually counsel both applicant and MDEQ to "avoid" the NSR Manual, since the NSR Manual is "[h]ighly complex and quantitative," "[d]ifficult to agree upon," and "[t]ime and resource intensive." *Id.* at 5.

The adequacy of MDEQ's BACT determinations turn on their individual merits. The foundation beneath them, however, the State Manual, stands apart from federal standards.

b. SO₂ BACT: Clean Fuels

In its brief list of BACT production processes, methods, systems, and techniques, Congress sounds one prominent note: fuels. CAA § 169(3), 42 U.S.C. § 7479(3). In addition to "fuel cleaning" and "treatment or innovative fuel combustion techniques," the remaining listed control is "clean fuels." *Id.* Congressional direction to permitting applicants and public officials is emphatic. In making BACT

¹² Level 1, for example, begins tracking NSR Manual language by requiring identification of the "top control," i.e., LAER. State Manual at 2. It then departs from the NSR Manual's "unless" clause by allowing non selection of LAER for no stated reason, sending the applicant to Level 2. Levels 2 and 3 continue to point the permit applicant toward successively less stringent options. Neither Level 2's identification of BACT for "the same or similar source types anywhere in the nation," *id.*, nor Level 3's for "different processes or industry types," *id.* at 3, purport to seek out the "top" technology.

¹³ Indeed, the permit applicant ventures the view that Level 4 "mirrors" the NSR Manual's top down approach. Permit Appl. § 5.1, at 35.

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determinations, they are to give prominent consideration to fuels. Board cases frequently underscore this charge. *See, e.g., In re Prairie State Generating Co.*, PSD Appeal No. 05-05, slip op. at 19-37 (EAB Aug. 24, 2006), 13 E.A.D. *, aff'd sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007); *In re Hillman Power Co.*, 10 E.A.D. 673, 677-79, 688-92 (EAB 2002); *In re Maui Elec. Co.*, 8 E.A.D. 1, 7-16 (EAB 1998); *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 134 (EAB 1994); *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 793-94 (Adm'r 1992).

The cleanest fuel choice for the NMU facility, argues Sierra Club, is wood.¹⁴ Its permit limits, however, allow NMU to burn coal "more than" twenty-two days per month and wood just over seven days per month. Fact Sheet at 4 (discussion of basis for SO₂ limits); Permit Eval. Form at 3 (comparing relative wood-to-coal fuel mix allowed by various SO_2 emission limits). Coal will be supplied from two, and only two, sources: Marquette and Presque Isle, both "nearby" electrical generating facilities. Fact Sheet at 2; RTC Doc. at 19-20. Each facility will supply coal that is restricted, by its own PSD permit, to a specified maximum BACT limits were "established based on the sulfur content. characteristics" of the coal with the higher allowable sulfur content of the two, 1.5%. RTC Doc. at 20; see Permit spec. cond. 1.3, at 7 (sulfur content of coal burned in CFB boiler "shall not exceed a maximum of 1.5 percent by weight, calculated on the basis of 12,000 Btu per pound of coal").¹⁵ Because these fuel choices – minimal use of wood and primary

¹⁴ The parties do not dispute that wood produces lower sulfur emissions when burned than coal. For information on contaminants emitted during the combustion of these fuels, see Office of Air Quality, Planning & Standards, U.S. EPA, I *Compilation* of Air Pollutant Emission Factors AP 42: Stationary Point and Area Sources chs. 1.1.3, 1.6.3, at 1.1 3 to 5, 1.6 2 to 3 (5th ed. 1995, rev'd Sept. 1998 & Sept. 2003).

¹⁵ Inconsistent statements in the record hinder absolute certainty on the source of the higher sulfur coal. *Compare* Permit Eval. Form at 4 (stating that Marquette is limited by permit to 1.5% sulfur coal and Presque Isle to 1.0% sulfur coal), *and* Permit Appl. Add. at 2 (Marquette coal has 1.5% sulfur content at 12,500 Btu/lb), *with* RTC Doc. at 20 (Presque Isle coal "may, by permit, contain up to 1.5% sulfur").

use of Marquette and Presque Isle coal – form the two pillars beneath the ultimate BACT limits, we carefully examine the basis for each.¹⁶

i. *Record for State Conclusions: Minimal Use of Wood and Exclusive Use of Marquette and Presque Isle Coal*

(a) Minimal Use of Wood

MDEQ's permit evaluation form presents three scenarios of daysof-wood-burning per month to days-of-coal-burning per month, ranging from a high of 500 hours (i.e., twenty days plus twenty hours) of wood burning to a low of 184 hours (i.e., seven days plus sixteen hours) of wood burning. *See* Permit Eval. Form at 3-4. The 500-hours scenario yields the lowest sulfur emission limit on a thirty-day average, 0.07 lb/MMBtu. *Id.* at 3. The 184-hours option produces the highest limit, 0.15 lb/MMBtu. *Id.* MDEQ selected the highest limit. *Id.*; Permit spec. cond. 1.1e, at 6 (thirty-day rolling average SO₂ limit).

Parsing the record for the reasoning behind MDEQ's choice yields little light. As between the availability of wood and coal, the documentation is neutral, their characteristics indistinguishable. Both the fact sheet and the permit evaluation form acknowledge storage limited to "three days['] fuel supply" but do not differentiate between wood and coal such that either would be in greater supply. Fact Sheet at 2; Permit Eval. Form at 4. Likewise, both recognize inclement weather's possible disruption of "any" fuel deliveries, again without either fuel singled out as more likely to suffer the effects. Fact Sheet at 2; Permit Eval. Form at 4. Yet, at the critical point of allocating fuel proportions in the permit, wood's demonstrably lower sulfur emissions and apparent equal availability to coal seemingly have no persuasive weight and are

¹⁶ MDEQ generally complimented NMU's BACT determination efforts. *See*, *e.g.*, RTC Doc. at 17 ("[t]he BACT limits are appropriate for this facility"); *id.* at 20 (MDEQ "completed a thorough BACT review").

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dismissed without explanation. The result is MDEQ's decision: coal usage over wood, by a margin of nearly three to one.

(b) *Exclusive Use of Marquette and Presque Isle Coal*

Commitment to these two coal sources alone was early and, through to the latter stages of the process, unvarying. From the initial permit application to the much later permit evaluation, NMU and MDEQ settled on precisely the same expression of their wishes – that all coal "will" come from either Marquette or Presque Isle. Permit Appl. § 2.1, at 3; Permit Eval. Form at 4; *see also* Permit Appl. Add. at 2 ("it is expected that the coal will come from" Marquette with Presque Isle "as a backup supplier"). This unwavering preference echoes elsewhere in the record, for example, in the Department's claim of "no [storage] space" beyond that set aside for coal from these "local power plants." RTC Doc. at 20. Indeed, although the record reflects that other coal, relative to Marquette and Presque Isle coal, will produce the lowest sulfur emissions, MDEQ proceeds without explaining why these sources are unavailable or not technically feasible.¹⁷

In one striking instance, the Department notes that "[o]ne of the lowest [power plant] emission limits found" in its database review is 0.05 lb/MMBtu, using 0.9% sulfur coal. Permit Eval. Form at 3 (twenty-four hour average SO₂ limit for 270-megawatt power plant; permit issued in 2004). Although this limit is considerably less than NMU's final

¹⁷ MDEQ also neglects to fully analyze the possibility of natural gas as a fuel source. NMU identifies natural gas in its permit application as a fuel that "will be used primarily for boiler startup" and at "any other times when solid fuel firing may not be available" as a backup fuel source. Permit Appl. § 2.1, at 3. NMU explains further that its existing natural gas supplier will provide it with "pipeline quality gas," *id.*, and mentions in its own BACT analysis that "pipeline quality natural gas and wood are lower in sulfur content than coal fuels." *Id.* § 5.3, at 40. Despite these references (which imply that natural gas is an available and technically feasible fuel for the CFB boiler), MDEQ's BACT analysis contains no evaluation of this fuel as a technological option that could potentially allow NMU to achieve very low emissions of SO₂ or other pollutants.

permitted limit, MDEQ nonetheless declined to consider it as BACT, offering not a word of explanation for not choosing it.

In another part of the record, drawing in on particular characteristics of the proposed NMU plant (i.e., CFB boiler without scrubbers), MDEQ assembles a list of five similar permitted coal burning facilities and their sulfur emission limits. *See* Permit Eval. Form at 3. The lowest limit of the five is 0.103 lb/MMBtu for a 44-megawatt facility – closest in power production by a wide margin to NMU's¹⁸ – and, since permitted in 2006, the most currently reviewed facility of the group. *Id.* Again, the lower limit is not chosen and compelling BACT data are inexplicably passed over without the Department attempting even the barest justification.

ii. Reasonableness of MDEQ's Conclusions

(a) Minimal Use of Wood

(1) Inclement Weather

MDEQ roots its commitment to only some seven days of wood burning per month in its determination that winter snows impede wood delivery. RTC Doc. at 19. This finding does not withstand the implications of its own record.

First, if snow makes uncertain the availability of "any" fuel deliveries, the Department fails to clarify why the consequences fall only on wood, and not on Marquette or Presque Isle coal deliveries.¹⁹ *See* RTC Doc. at 19, 24; Permit Eval. Form at 4; Fact Sheet at 2. Discrepancies in the record with such an overwhelming tilt in favor of coal erode

¹⁸ The four other facilities have one or two CFB boilers that range in size from 250 to 660 megawatts. Permit Eval. Form at 3.

¹⁹ "If only coal can be obtained * * *" so the Department paints the sole consequence of severe winter weather. RTC Doc. at 24. Absent without explanation is the no less plausible result of winter snows: that only wood can be obtained.

confidence in MDEQ's conclusion. For example, many statements expressly connect winter weather to disruptions not just of coal, but of "any" fuel supplies. *E.g.*, RTC Doc. at 24; Permit Eval. Form. at 4^{20}

Second, even assuming, as did the permit, disproportionate weather impacts on the order of making coal three times as available as wood, *see* Permit Eval. Form at 3, the factual predicate does not sustain the conclusion. The furthest reach of inclement weather is "winter or * * * spring," RTC Doc. at 19, yet the permit sets a static, year-round assumption of twenty-two days of coal to seven days of wood availability per month.²¹

Third, the record tells merely of wood provided by unidentified "independent suppliers." Permit Appl. § 2.1, at 3; Permit Eval. Form at 4. Whether these suppliers are nearer or more distant than Marquette or Presque Isle, and thus more or less likely to suffer delivery disruptions due to poor weather, the record does not say. In the absence of this information, the true effects of inclement weather on wood deliveries cannot be known.

(2) Storage Restrictions

While MDEQ makes claims that storage room for combined wood and coal supplies is limited to three days,²² substantiating documentation

²⁰ A lone phrase in one of MDEQ's responses to comments, without explanation and implausibly, converts weather's undifferentiated effects to restricting only the "wood supply." RTC Doc. at 19.

²¹ MDEQ cites federal government reports to sustain its claim of severe weather in northern Michigan. MDEQ Resp. at 13 n.49 (citing National Climatic Data Center website for storm events). Without deciding whether this extra record information is properly before us, we note that, in any event, even enhanced data about local weather conditions would not, without more, bear on the relative availability of particular fuels.

²² We take MDEQ's frequent finding of only three days' storage, e.g., Fact Sheet at 2; RTC Doc. at 20, 24, at its logical word storage of combined wood and coal (continued...)

is missing. MDEQ identifies no particular physical, structural, or other impediment to back its assertions. The record's single pointer allowing any independent judgment as to storage limitations is the site diagram showing a facility of apparently spacious storage capacity. See Permit Appl. app. A (detailed Ripley Heating Plant diagram). It outlines wood silos with no visible spacial restraints inhibiting larger or additional silos.²³ It demarcates a "wood handling building" and "wood hopper" of dimensions comparable to the wood silo, both clearly suggesting additional on-site capacity for greater supplies of wood. See id. Expanses of seemingly empty "lot" space (denominated as Lots #19 and #22) and an unlabeled area ringing much of the coal containment area – all many times the size of the outlined wood silo – also call into question why such large tracts are unavailable for wood storage. See id. Nor does the diagram account for the storage possibilities of substantial other areas of apparently empty space interspersed throughout the facility. Given that purported storage limitations are central to the BACT analysis in this case, one reasonably should expect a robust presentation of evidence in the record to establish limited space as a fact.²⁴

²³ We recognize that MDEQ, accommodating community concerns about possible odors from stored, wet wood, barred stockpiling wood outside fuel silos. Permit spec. cond. 3.2, at 11; *see* RTC Doc. at 4. To sensibly confine fuel storage to silos, however, does not address or explain MDEQ's sanctioning of NMU's failure to propose construction of additional storage silos on a site the University's own diagram appears to show fully capable of handling more.

²⁴ At oral argument, MDEQ instead suggested that NMU intended its diagram to show only the details of the Ripley Heating Plant, and not what structures or uses might be present on or intended for the seemingly capacious empty spaces surrounding (continued...)

²²(...continued)

supplies, not separate three day supplies for each. At oral argument, however, MDEQ stated that NMU will have three days' storage space for each fuel. OA Tr. at 44 45; *see also* MDEQ Resp. at 2 ("[w]ood and coal will be stored in silos that have the capacity to store up to a three day supply of each fuel"). We defer to the record, not counsel's representations. *E.g., In re Wash. Aqueduct Water Supply Sys.*, 11 E.A.D. 565, 589 (EAB 2004) (a permit issuer "cannot through its arguments on appeal augment the record upon which the permit decision was based").

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(b) *Exclusive Use of Marquette and Presque Isle Coal*

Had it come after "careful and detailed" consideration, *In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005), or been attentive to "[appropriate] technology or methods," *In re Prairie State Generating Co.*, PSD Appeal No. 05-05, slip op. at 15 (EAB Aug. 24, 2006), 13 E.A.D. , *aff'd sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007), MDEQ's unqualified declaration that "[c]oal will be obtained" from Marquette or Presque Isle might have withstood scrutiny.²⁵ *See* Permit Eval. Form at 4. But all indications are otherwise, suggesting a fixed, preselected outcome, or at least one never subjected to serious examination.²⁶

First, the four corners of the record itself, including the facility diagram noted above, belie claims of no storage space for coal other than Marquette or Presque Isle coal. Second, even were storage space limited to three days' supply, shutting out any coal but Marquette or Presque Isle coal raises an obvious question to which the record gives no answer: why even a storage-limited site is incapable of accommodating non-Marquette or non-Presque Isle coal. Third, taking MDEQ at its word of severe weather disruptions to "any" fuel supply, the argument that Marquette and Presque Isle coal deliveries will somehow – and unique among all other coals or wood – prevail over such weather, and resoundingly enough to

²⁴(...continued) the plant. OA Tr. at 47.

²⁵ NMU itself acknowledged single focus coal procurement: "MDEQ correctly [considered] * * *the* [Marquette and Presque Isle] coal * * * that would be available to NMU when biomass is unavailable." NMU Resp. at 23 (emphasis added).

²⁶ MDEQ provides some indication why it holds so persistently to these two coal sources alone. The Department claims the 1.5% sulfur content of the higher sulfur coal is "legally allowed," as if to suggest that use of "legal" fuel ends the permit authority's BACT obligations to seek the cleanest fuel available. *See* MDEQ Resp. at 16 (explaining that coal used at Presque Isle is allowed by permit to contain a maximum of 1.5% sulfur by weight) (citing RTC Doc. at 20).

write their use into the permit twenty-two days per month, year round, is unsustainable.

The record is silent as to why other coal sources, whether more distant or more proximate, were not considered. This gap is particularly troubling on a record that spotlights at least two coal-fired, lower sulfur-polluting facilities, both employing low sulfur coal or other low sulfur emission technological features apparently achievable but inexplicably rejected for the NMU facility.²⁷ *See* Permit Eval. Form at 3 (considering 24-hour average SO₂ BACT limits of 0.05 lb/MMBtu for 270-megawatt plant and 0.103 lb/MMBtu for 44-megawatt plant).

One ambiguous sentence in the record, embellished slightly in MDEQ's brief, attempts a justification. "A different plan would redefine the source as proposed," says the Department. RTC Doc. at 19; *see* MDEQ Resp. at 15. Yet, at best, this "plan" is opaque. The preceding sentence speaks in one breath of a broad "choice" of fuels and in another of MDEQ's decision to choose only Marquette and Presque Isle coal. RTC Doc. at 19; *see* Fact Sheet at 2; Permit Eval. Form at 4. At worst, MDEQ's assertion that a different coal source constitutes impermissible "redefining" is unpersuasive and not supported by the record.

MDEQ's brief also notes the difficulty of arranging transport of non-local lower sulfur coal to the Ripley Heating Plant. MDEQ Resp. at 15. Such shipments, necessitating that NMU "receive," "stockpile," and "feed" the non-local coal into the boiler, would require "changes in design of the facility," thus "impermissibly redefining the source." *Id.*

²⁷ If MDEQ implicitly argues that severe weather disruptions to fuel deliveries necessitate exclusive use of Marquette or Presque Isle coal because both sources are nearby and presumably more likely to prevail during poor weather, *see, e.g.*, RTC Doc. at 19, it does so unsuccessfully. Proximity alone is insufficient on a record devoid of attempts to identify other technically feasible sources as proximate as, or more proximate than, Marquette or Presque Isle. NMU offers Marquette and Presque Isle proximity as conferring a coal storage advantage (i.e., space limitations necessitate "just in time" deliveries from nearby coal sources, NMU Resp. at 23), but again, no record support either for this statement or the basis behind it is offered.

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The brief is not part of the administrative record for this permit, and thus we give its factual representations no weight. *See* 40 C.F.R. § 124.18(c) (administrative record for EPA-issued permit is considered complete on date final permit is issued). We do, however, address the legal argument it raises.

c. Redefining the Source

"Historically, EPA has not considered the BACT requirement as a means to redefine the design of the source when considering available control alternatives." NSR Manual at B.13. Board and Administrator decisions adhere firmly to this principle. *See, e.g., Prairie State*, slip op. at 26-37, 13 E.A.D. ; *In re Hillman Power Co.*, 10 E.A.D. 673, 691-92 (EAB 2002); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 135-44 (EAB 1999); *In re SEI Birchwood, Inc.*, 5 E.A.D. 25, 29-30 n.8 (EAB 1994); *In re Haw. Commercial & Sugar Co.*, 4 E.A.D. 95, 99-100 (EAB 1992); *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 793 n.38 (Adm'r 1992); *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 843 & n.12 (Adm'r 1989).

As more finely rendered by the Board, "certain [design] aspects" of the proposed facility are beyond the reach of BACT; "other [design] aspects" are within it. *Prairie State*, slip op. at 26, 13 E.A.D. at . To guide it, the Board gives central importance to "how the permit applicant defines the proposed facility's purpose or basic design," *id.* at 28,²⁸ but puts the applicant's case to a "hard look." *Id.* at 34-35, 13 E.A.D. at ; *e.g., Knauf*, 8 E.A.D. at 135-44.

Accordingly, the Board takes care to identify "inherent" design elements, *Prairie State*, slip op. at 30, 13 E.A.D. at , part of the "fundamental purpose" of the proposed facility, *id*. at 32 n.25, 13 E.A.D.

²⁸ Deference to applicant characterization is not unbridled. A design motivated by cost savings, avoidance of risks inherent in new or innovative technologies, or other considerations unrelated to basic design elements will not escape BACT review. *E.g.*, *Prairie State*, slip op. at 30 n.23, 13 E.A.D. at

at , or a design such that change to it would "call into question [the facility's] existence." *See id.* at 32, 13 E.A.D. at . This test shields from BACT review fuel choices found "integral" to the basic design. Proposed coal-fired electrical generators need not consider a natural gas turbine, for example. *See id.* (citing *SEI Birchwood*, 5 E.A.D. at 29-30 n.8; *Haw. Commercial*, 4 E.A.D. at 99-100; *Old Dominion*, 3 E.A.D. at 793; NSR Manual at B.13).

On the other hand, the CAA promotes "clean fuels" with particular vigor. *See* CAA § 169(3), 42 U.S.C. § 7479(3). Merely equating use of lower polluting fuels to impermissible redesign in the hope of paving an automatic BACT off-ramp pointedly frustrates congressional will. The United States Court of Appeals for the Seventh Circuit is notably dismissive of such strategies. Clean fuels may not be "read out" of the Act merely because their use requires "some adjustment" to the proposed technology. *Sierra Club v. EPA*, 499 F.3d 653, 656 (7th Cir. 2007). If the only required adjustment were that a dirtier fuel be "switched" to a cleaner fuel, said the court in an illustration of near perfect aptness to NMU's CFB boiler, then low sulfur coal should be the BACT choice over high sulfur coal. *Id*.

Too late and on too meager a record, MDEQ attempts to inject the specter of major redesign. Its brief pushes forward entirely new theories – "transport" difficulties, "stockpile * * * and [boiler] feed" problems – that it claims amount to redesign or "redefining the source" were non-Marquette or -Presque Isle coal forced upon it.²⁹ MDEQ Resp. at 15. But the record before us does not sustain such claims. The documentary trail offers no basis to conclude that any fundamental design change, or any source or facility design change whatsoever, would result were NMU, like the facility posited in *Sierra*, to burn lower sulfur non-Marquette or -Presque Isle coal. No data show the CFB boiler incapable of burning coal from other sources. Indeed, that its design allows burning of "bituminous

²⁹ NMU adds parallel facility design concerns e.g., infeasibility, harm to the "business plan" also without reference to any sustaining basis in the record. *See* NMU Resp. at 23 24.

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and subbituminous Powder River Basin * * * coals," Permit Appl. § 2.1, at 3, suggests so broad a coal range as to be nearly dispositive evidence to the contrary.³⁰ No facility diagram or other reason tells why storage space designated exclusively for Marquette and Presque Isle coal cannot make way for non-Marquette or -Presque Isle coal, or why storage areas for additional non-Marquette and -Presque Isle coal is not feasible. Nor does MDEQ put before us any documentation that delivery of non-Marquette or -Presque Isle coal would work some harm, or force some change, to the basic facility design.

d. Conclusion

If the NSR Manual is the broad, oft-traveled thoroughfare to determining BACT, MDEQ has almost categorically declined to follow it - or any method consistently faithful to statutory and regulatory guidelines. MDEQ's SO₂ BACT analysis locks onto a combination of minimal wood burning and predominant use of Marquette or Presque Isle coal, yet offers few connecting threads of logic or data to sustain these fuel choices, justify them as enabling NMU to achieve emissions limitations clean enough to be BACT, or support the redefining-thesource claim. The Department's decision lacks a coherent, "clearly ascertainable basis," Knauf, 8 E.A.D. at 134, or "careful and detailed" look, In re Cardinal FG Co., 12 E.A.D. 153, 162 (EAB 2005), and we are unable to conclude that it "meets the requirement of rationality." In re Gov't of D.C. Mun. Separate Storm Sewer Sys., 10 E.A.D. 323, 343 (2002). Therefore, under part 124, we remand the permit to MDEQ for reconsideration of the BACT limitations chosen for SO₂ emissions from the CFB boiler.

³⁰ "Bituminous" or "soft" coals are the largest group of coals and have lower fixed carbon and higher volatile matter than anthracite (i.e., hard coal). Office of Air Quality, Planning & Standards, U.S. EPA, I *Compilation of Air Pollutant Emission Factors AP 42: Stationary Point and Area Sources* ch. 1.1, at 1.1 1 (Sept. 1998). "Subbituminous" coals "have higher moisture and volatile matter and lower sulfur content than bituminous coals and may be used as an alternative fuel in some boilers originally designed to burn bituminous coals." *Id.*

4. Pollutants with No BACT Controls

a. BACT Analysis for PM_{2.5} Emissions from the CFB Boiler

In comments on the draft permit and in its opening brief, Sierra Club notes the PSD program's requirement of BACT limits for "each pollutant subject to regulation." SC Cmts. at 7 (citing CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2)); Pet'n at 8 (citing 40 C.F.R. § 52.21(j)(2)). Sierra Club observes that $PM_{2.5}$ is a "pollutant subject to regulation under the Act" because EPA established NAAQS for that specific air contaminant in July 1997. Pet'n at 8 (citing National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652 (July 18, 1997) (codified as amended at, *inter alia*, 40 C.F.R. § 50.7)). Sierra Club then contends that MDEQ erred in issuing NMU's permit because it substituted a PM_{10} BACT analysis for the requisite $PM_{2.5}$ BACT analysis, pursuant to the Agency's so-called "surrogate" policy.³¹ SC Cmts. at 6-8; Pet'n at 8-11.

EPA released the surrogate policy in October 1997, just a few months after it promulgated the PM_{2.5} NAAQS. *See* MDEQ Resp. Ex. 5 (Memorandum from John S. Seitz, Director, Office of Air Quality Planning & Standards, U.S. EPA, to Regional Air Directors, *Interim Implementation of New Source Review Requirements for* $PM_{2.5}$ (Oct. 23, 1997)) ("Seitz Policy"). In so doing, EPA noted "significant technical difficulties" attending full implementation of PSD requirements for $PM_{2.5}$, largely resulting from a lack of adequate tools for calculating $PM_{2.5}$ in meeting the PSD requirements. *Id.* at 1-2. EPA later reaffirmed the Seitz Policy in April 2005, noting that the Agency had not yet promulgated an implementation rule for $PM_{2.5}$ and thus administration of PSD requirements for $PM_{2.5}$ emissions remained "impractical." *Id.* Ex. 6, at 4 (Memorandum from Stephen D. Page, Director, Office of Air Quality

 $^{^{31}}$ Notably, Sierra Club does not challenge the adequacy of the PM_{10} analysis, only the use of PM_{10} as a surrogate for $PM_{2\,5}.$
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Planning & Standards, U.S. EPA, to Regional Offices, *Implementation of New Source Review Requirements in PM-2.5 Nonattainment Areas* 4 (Apr. 5, 2005)).

On May 12, 2008, the date MDEQ issued NMU's PSD permit, and all throughout the preceding development period for this permit, the $PM_{10}/PM_{2.5}$ surrogate policy represented the Agency's recommended approach for regulating $PM_{2.5}$ emissions. MDEQ indisputably relied on that policy in developing NMU's BACT limits for $PM_{2.5}$. Permit spec. conds. 1.1bb, 1.1cc & n.*; see RTC Doc. at 18.

On appeal, Sierra Club attempts to establish clear error in MDEQ's reliance on this approach by asserting that "no provision nor legal basis in the regulations" allows for such an approach, Pet'n at 9, and by claiming that substitution of PM_{10} limits for $PM_{2.5}$ limits is "arbitrary" in light of the differing health impacts of $PM_{2.5}/PM_{10}$.³² *Id.* at 10-11. These arguments essentially repeat contentions Sierra Club made in comments on the draft permit. *See* SC Cmts. at 6-8. The Department responded to these arguments by referencing the "administrative impracticab[ilities]" – i.e., lack of measurable standards and calculation tools – EPA cites as justification for the surrogate policy, and also presented some comparative information on $PM_{2.5}$ limits at other facilities. RTC Doc. at 18.

We hold on this record that MDEQ properly relied on the surrogate policy to evaluate BACT requirements for the CFB boiler's emissions of $PM_{2.5}$. Sierra Club failed to make any showing of clear error, abuse of discretion, or other grounds for a grant of review of the

³² Sierra Club also makes arguments relating to a final $PM_{2.5}$ implementation rule EPA issued on May 16, 2008, just four days after MDEQ issued NMU's permit. Pet'n at 9 10; Reply to MDEQ at 2 3; Reply to NMU at 5; *see* Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers ($PM_{2.5}$), 73 Fed. Reg. 28,321 (May 16, 2008) (to be codified in scattered sections of 40 C.F.R. pts. 51 52). In light of Sierra Club's dismissal of these arguments as irrelevant to the permit at issue in this case, *see* Reply to MDEQ at 3 & n.1; OA Tr. at 22 23, we do not address them.

Department's permit decisions pertaining to $PM_{2.5}$. See 40 C.F.R. § 124.19(a). Accordingly, we deny review on this basis.

b. BACT Analyses for CO₂ and N₂O Emissions from the CFB Boiler

Lastly, Sierra Club argues that MDEQ erred by declining to conduct BACT analyses for carbon dioxide ("CO₂") and nitrous oxide (" N_2O ") emissions from the CFB boiler. Pet'n at 11-18; Reply to MDEQ at 4-11; Reply to NMU at 6-20. In brief, Sierra Club claims that these two pollutants are "subject to regulation" under the CAA and thus BACT limits must be developed for them. In Sierra Club's view, CO₂ is regulated under the Act because section 821 of Public Law 101-549, enacted in 1990, provides for monitoring and reporting of CO₂ emissions from certain stationary sources. Sierra Club's arguments in this regard closely and substantially track those made in In re Deseret Power Electric Cooperative, a case recently the subject of detailed analysis and remand by this Board. See generally In re Deseret Power Elec. Coop., PSD Appeal No. 07-03 (EAB Nov. 13, 2008), 14 E.A.D. . For the reasons set forth in that decision, we similarly remand the CO₂ issue here, directing MDEQ, guided by our findings in Deseret, to undertake the same consideration whether the CAA's "pollutant subject to regulation" language requires application of a BACT limit to CO₂ emissions.

In addition, with respect to the questions whether approval by EPA of CO₂- or N₂O-related provisions in several state implementation plans ("SIPs") constitutes CO₂ or N₂O regulation under the Act, we instruct the Department to fully consider these issues on remand, its response to comments having failed to do so. *See* RTC Doc. at 8, 18-19, 29-30. Lastly, Sierra Club contends for the first time that CO₂ is one of the constituents of municipal solid waste landfill emissions (subject to CAA § 111 and implementing regulations) and therefore is regulated under the Act. As this argument was not presented to MDEQ during the public comment period, it is not preserved for consideration in this appeal. *In re ConocoPhillips Co.*, PSD Appeal No. 07-02, slip op. at 44-51 (EAB June 2, 2008), 13 E.A.D. ; *In re Christian County Generation, LLC*,

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PSD Appeal No. 07-01, slip op. at 11-19 (EAB Jan. 28, 2008), 13 E.A.D.

. However, since the remand requires a fresh analysis of whether CO_2 and N_2O are "subject to regulation," the Department should consider in the remand proceeding this or any other issue pertaining to possible BACT limits for CO_2 and N_2O emissions from NMU's boiler.

B. Air Quality Issues

We turn our attention next to a second focal point of the PSD program: *air quality*. In section 165 of the Clean Air Act, Congress directs owners and operators of proposed major emitting facilities to demonstrate that emissions from the construction or operation of their facilities "will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, (B) national ambient air quality standard in any air quality control region, or (C) any other applicable emission standard or standard of performance under this chapter." CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3). EPA's regulations implement this provision by requiring, among other things, that each applicant for a PSD permit conduct a "source impact analysis," as follows:

The 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).

The national ambient air quality standards, or NAAQS, referenced in the first prong of the source impacts analysis are (as noted in Part I.A above) maximum ambient air concentrations for specific pollutants that EPA has determined are necessary to protect public health and welfare. See CAA §§ 108(a)(1)(A), 109, 42 U.S.C. §§ 7408(a)(1)(A), 7409; 40 C.F.R. §§ 50.4-.12. The maximum allowable increase over a baseline referenced in the second prong of the analysis is called a "PSD increment" or "air quality increment." EPA designates increments as amounts of specific pollutants that can be added to the ambient air over certain baseline concentrations of those pollutants without causing significant deterioration of air quality from the baseline levels. See CAA § 165(a)(3)(A), 42 U.S.C. § 7475(a)(3)(A); 40 C.F.R. § 52.21(c). The smallest increments are available (thus allowing for the smallest degree of air quality deterioration) in "Class I" areas, which consist of national parks and wilderness areas. Larger increments are available in "Class II" areas, which are areas in which "normal well-managed industrial growth" is anticipated, and the largest increments are available in "Class III" areas, which are designated for more intensive development.³³ See CAA §§ 162, 163(b)(1), 42 U.S.C. §§ 7472, 7473(b)(1); 40 C.F.R. § 52.21(c); NSR Manual at C.4-.5.

A permit applicant establishes compliance with the NAAQS and PSD increment elements of the source impact analysis through the vehicle of an "ambient air quality analysis," which applicants must prepare under the permitting rules for each regulated pollutant their proposed facilities

³³ Congress expressly designated all international parks, national wilderness areas/memorial parks over 5,000 acres in size, and national parks over 6,000 acres in size as Class I areas. CAA § 162(a), 42 U.S.C. § 7472(a). Congress also initially designated all other areas falling within state determined attainment and unclassifiable areas as Class II areas. CAA § 162(b), 42 U.S.C. § 7472(b). These latter areas may be redesignated as Class I or Class III upon state or tribal proposal and EPA approval as a revision to the applicable state implementation plan. 40 C.F.R. § 52.21(g).

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will emit in "significant" amounts.³⁴ 40 C.F.R. § 52.21(b)(23)(i), (m)(1)(i). This analysis predicts a pollutant's future concentration in the ambient air by modeling a proposed facility's expected emissions of the pollutant against the backdrop of existing ambient conditions. To conduct an air quality analysis, a permit applicant compiles data on the proposed facility's physical specifications and anticipated emission rates, local topography, existing ambient air quality, meteorology, and related factors. See, e.g., 40 C.F.R. § 52.21(l), (m); id. pt. 51 app. W (Guideline on Air Quality Models); In re Knauf Fiber Glass, GmbH, 8 E.A.D. 121, 145-48 (EAB 1999); NSR Manual at C.16-.23, .31-.50. These data are then processed using mathematical models that calculate the rates at which pollutants are likely to disperse into the atmosphere under various climatological conditions, with the goals of determining whether emissions from the proposed source will cause or contribute to a violation of either the NAAQS or the PSD increments. See 40 C.F.R. § 52.21(1); id. pt. 51 app. W; NSR Manual at C.24-.27, .51-.70.

As a general matter, an air quality analysis will unfold in two phases. First, the permit applicant will conduct a "preliminary analysis" using dispersion modeling to evaluate whether emissions of the pollutant from the proposed facility will – by themselves, without consideration of existing ambient air quality – exceed certain "significant ambient impact levels," or "SILs."³⁵ See NSR Manual at C.24 & tbl. C-4, at C.28 (listing SILs recommended for use in Class II areas). If the new emissions do not

³⁴ More precisely, each applicant for a proposed major stationary source that has the potential to emit any regulated pollutant in a "significant" amount, or for a proposed major modification that will result in a "significant net emissions increase" of any regulated pollutant, must include in the permit application an ambient air quality analysis for each such pollutant. 40 C.F.R. § 52.21(m)(1)(i). The emissions rates deemed "significant" for these purposes are rates equal to or in excess of the following: for CO, 100 tpy; for NO_x or SO₂, 40 tpy; and for PM₁₀, 15 tpy. *Id.* § 52.21(b)(23)(i) (listing significant rates for these and other pollutants).

 $^{^{35}}$ As we observed in *Knauf*, the SILs are "just one set of several standards in the PSD program that make use of the word 'significant.' These levels are not to be confused with the significance levels that govern PSD review generally." 8 E.A.D. at 149 n.40; *cf.* 40 C.F.R. § 52.21(b)(23)(i) (listing of the latter significance levels).

exceed these levels, the proposed facility will have successfully demonstrated compliance with the NAAQS and PSD increments. See In re Prairie State Generating Co., PSD Appeal No. 05-05, slip op. at 137-44 (EAB Aug. 24, 2006), 13 E.A.D. (citing Agency guidance on use of SILs), aff'd sub nom. Sierra Club v. EPA, 499 F.3d 653 (7th Cir. 2007); In re AES Puerto Rico, LP, 8 E.A.D. 324, 331, 343-44 (EAB 1999), aff'd sub nom. Sur Contra La Contaminacion v. EPA, 202 F.3d 443 (1st Cir. 2000). If the new emissions do exceed these levels, then a second phase, called a "full impact analysis," will typically be conducted. In this second phase, the permit applicant will use dispersion models to estimate the ambient concentrations that will result from its proposed emissions in combination with emissions from existing sources. NSR Manual at C.24-.53; see Air Quality Division, MDEQ, Air Dispersion Modeling Guidance Document § 1.0, at 1 (June 2008). These figures will then be used to determine whether the proposed facility causes or contributes to a violation of the NAAQS and PSD increments. See, e.g., AES Puerto Rico, 8 E.A.D. at 345-47; Knauf, 8 E.A.D. at 148-54.

In the present case, NMU's proposed installation of a new CFB boiler at the Ripley Heating Plant is considered a "major modification" that will result in a significant net increase in emissions of SO₂, PM₁₀, CO, and NO_x from the facility, as noted in Part I.B above. Accordingly, the ambient air quality analysis requirements apply with respect to each of these four pollutants. However, upon conducting preliminary air quality analyses, NMU determined that the proposed boiler will emit only one pollutant, SO₂, at levels in excess of the SILs. Permit Appl. §§ 6.0, 6.5, at 51-52, 69-76. Thus, the University conducted a full impact air quality analysis solely for that pollutant. *See id.* §§ 6.5.2-.3, at 71-74. MDEQ reviewed and approved NMU's air quality modeling and conclusions regarding the boiler's impact on the NAAQS and PSD increments. *See* Fact Sheet at 2-3; MDEQ Resp. Ex. 9 (MDEQ, *Air Dispersion Analysis Summary, NMU – Ripley Heating Plant* (May 8, 2007)) ("Air Analysis Summary").

On appeal, Sierra Club challenges four aspects of the air quality analysis performed for the CFB boiler and approved by MDEQ, claiming

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as follows: (1) the Department's attempt to account for PSD incrementconsuming emissions from the nearby Presque Isle Power Plant is erroneous as a matter of law; (2) the Department failed to account for worst-case emissions in the air quality modeling used to establish compliance with NAAQS and PSD increment standards; (3) the Department failed to require that NMU conduct site-specific preconstruction monitoring mandated by the CAA; and (4) the Department employed improper standards in excusing NMU from conducting PSD increment analyses for Class I-designated areas. We address each of these issues in turn below.

1. Consumption/Expansion of PSD Increment

a. Legal Background

As noted above, PSD increments are designed to "prevent significant deterioration" of air quality in locations that already have relatively clean air by ensuring that contaminants projected to be contributed by proposed new or modified sources, combined with levels of contamination already present in the ambient air as of a specific baseline date, will fall within bounds established by the Agency. To date, EPA has established PSD increments for just three pollutants – SO₂, PM₁₀, and NO₂. The increments consist of numeric concentrations, measured in micrograms of pollutant per cubic meter of air, that vary according to averaging period (3-hour, 24-hour, or annual averages) and geographic location (Class I, II, or III). See 40 C.F.R. § 52.21(c) (table of increment levels).

As PSD permits are issued over the course of time, newly authorized emissions are said to "consume" a portion of the PSD increment available in a given area, thus "shrinking" or reducing the remaining amount of increment available for new development.³⁶ *In re W. Suburban Recycling & Energy Ctr., LP*, 8 E.A.D. 192, 195 (EAB

³⁶ The *amount* of increment consumed by a source that has undergone a major modification is at issue in this appeal and is addressed in the following analysis.

1999); see 72 Fed. Reg. 31,372, 31,376-77 (June 6, 2007); 45 Fed. Reg. 52,676, 52,717-20 (Aug. 7, 1980); 43 Fed. Reg. 26,388, 26,400-02 (June 19, 1978). Conversely, as sources reduce their emissions or close down completely, pollutant levels that previously existed are eliminated, thus "freeing up" portions of increment – i.e., "expanding" the increment – and making it available again for new development. 72 Fed. Reg. at 31,376-77; 45 Fed. Reg. at 52,717-20; 43 Fed. Reg. at 26,400-02; NSR Manual at C.10-.11. In the State of Michigan, MDEQ policy specifies that no single facility may consume more than 80% of applicable Class II increment standards, in order to allow for future industrial growth. *E.g.*, Air Quality Division, MDEQ, *Air Dispersion Modeling Guidance Document* § 1.0, at 1 (June 2008); *see* Permit Appl. § 6.0, at 51.

b. Procedural Background

In its petition, Sierra Club argues that MDEQ's attempt to account for increment-consuming emissions from the nearby Presque Isle Power Plant is erroneous as a matter of law. Pet'n at 39. By way of background, Sierra Club explains that in the original source impact analysis prepared by NMU for its permit application, the University had assumed emissions from all existing stationary sources in the vicinity of the new powerhouse -including Presque Isle-were included in the baseline concentration and thus did not consume any increment. Id. at 40 (citing Permit Appl. § 6.5.2, at 71). In preparing that analysis, NMU had actively sought MDEQ's input to ensure evaluation of a complete inventory of emissions sources, but neither the Department nor NMU identified Presque Isle as an increment-consuming source. See Permit Appl. §§ 6.4, 6.5.2, at 67, 71. In comments on the draft permit, however, Sierra Club pointed out that Presque Isle had undergone construction through one or more major modifications since the date designated as the "major source baseline" for SO_2 (i.e., January 6, 1975), and emissions attributable to those modifications could not, by virtue of their timing, possibly be reflected in the baseline concentration. It took the position that it was improper to exclude not only post-January 6, 1975 emissions, but that all of Presque Isle's emissions (whether pre- or post-January 6, 1975) should have been modeled as consuming some portion of the PSD increment available in

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the ambient area near NMU's campus. SC Cmts. at 44-54 (cited in Pet'n at 40).

In its response to comments, MDEQ did not acknowledge any error in its review and approval of NMU's original PSD increment analysis. Instead, the Department simply changed course, treating Presque Isle as an increment-consuming source for purposes of calculating that facility's effect on the air quality modeling. MDEQ explained its revised analysis as follows:

> The SO₂ major source baseline date was set by the [CAA] to be January 6, 1975. Emissions associated with modification at a major stationary source consume increment after this date. A comparison was made between the reported SO₂ emissions from Presque Isle for 1973 and 2006 which were found to be 15,274 tpy and 16,609 tpy respectively. This increase of 1335 tpy should not be part of the baseline and should be considered in the PSD increment analysis. New modeling was conducted by [MDEQ] which added the 1335 tpy to the increment analysis and the results indicated that this change had no effect on either the 3-hr or 24-hr PSD maximum (100%) SO₂ PSD increment levels. However, the addition of the 1335 tpy did cause the annual PSD increment concentration to increase to approximately 10 percent which is still well below the State's 80% allowable Class II PSD increment criterion.

RTC Doc. at 14.

c. Arguments on Appeal

On appeal, Sierra Club asserts that "[t]here is no legal basis for the 1,355 tons used" by MDEQ in its revised analysis, Pet'n at 41, and continues to claim that the Department should have used all of Presque Isle's "actual emissions" to calculate increment consumption. As

authority for its proposition, Sierra Club points to the PSD regulations, which specify, in its view, that all "actual emissions" from new and modified major stationary sources constructed after the major source baseline date should be excluded from the baseline concentration and instead analyzed as consuming part of the PSD increment. *Id.* (citing 40 C.F.R. § 52.21(b)(13)(ii)(a)). Sierra Club notes that "actual emissions" are defined as "the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation." *Id.* (quoting 40 C.F.R. § 52.21(b)(21)(ii)). Alternatively, a source's "actual emissions" can be presumed to be its "allowable emissions." *Id.* (referring to 40 C.F.R. § 52.21(b)(21)(ii)).

Employing these definitions, and drawing on Presque Isle emissions data taken from EPA's Acid Rain Database, Sierra Club concludes that "[a]t a minimum, the 'actual emissions' from [Presque Isle] would be the average rate during the representative two years preceding the date of permit issuance for the NMU plant; while MDEQ did not calculate this amount, it is approximately between 14,235 and 16,690 tons of SO₂." Reply to MDEQ at 21 n.9 (citing Pet'n at 42 & n.6, which provides the Acid Rain Database reference as <u>www.epa.gov/airmarkets</u>). Sierra Club criticizes MDEQ for choosing Presque Isle emissions data from two "random" years, 1973 and 2006, calculating the difference between the two emissions rates, and thereby deriving a figure for use in the increment-consumption analysis that, in its view, is ten times lower than it should be. *Id.* at 22; Pet'n at 42; OA Tr. at 27-28.

d. Analysis

Upon review of the briefs, we find that the parties generally do not disagree on what law applies to this issue. Indeed, each side quotes portions from the same regulatory and statutory provisions, albeit for differing purposes. *Compare* Pet'n at 39-42, Reply to MDEQ at 21-22, *and* Reply to NMU at 26-30, *with* MDEQ Resp. at 19-20, *and* NMU Resp. at 24-25. Their disagreement lies in how these provisions should be interpreted, which leads to a dispute over the method that should be used

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to determine how much increment a modified source consumes (or relinquishes) as a result of the modification. MDEQ and NMU cite the statute, regulations, and long-standing Agency guidance to support their view that any post-baseline *change* in a facility's emissions (be it upward or downward) resulting from a major modification must be factored into the increments analysis. *See* MDEQ Resp. at 19-20; NMU Resp. at 24-25. Thus, only the emissions impact of the change consumes (or relinquishes) increment. Sierra Club urges a contrary interpretation based on the "plain language" of the relevant authorities, suggesting that *all* emissions from a source that has undergone a major modification since the baseline date must be treated as increment-consuming, not just the emissions associated with the change. *See* Reply to MDEQ at 21-22; Reply to NMU at 26-30; OA Tr. at 27, 109-10.

i. Congressional Intent

To resolve these competing interpretations, we look first to the statute and legislative history to see what those sources might tell. We learn, at the outset, that Congress largely left to EPA the task of defining the methods by which PSD increments are deemed consumed or expanded. *See* CAA § 165(e)(1), (3), 42 U.S.C. § 7475(e)(1), (3) (directing EPA to promulgate regulations implementing PSD program); *see also* 72 Fed. Reg. at 31,379 (the CAA "provide[s] no guidance on increment consumption calculations"); 45 Fed. Reg. at 52,718 (same). Congress did, however, define several parameters for the "baseline concentration" of pollutants, which are relevant to the increments analysis. *See* 45 Fed. Reg. at 52,718 ("Increment consumption or expansion is directly related to baseline concentration. Any emissions not included in the baseline are counted against the increment.").

Under Congress' definition, the "baseline concentration" of a pollutant in a particular area is the concentration present in the ambient air at the time the first PSD permit application affecting that area is submitted. CAA § 169(4), 42 U.S.C. § 7479(4); *Ala. Power Co. v. Costle*, 636 F.2d 323, 374 (D.C. Cir. 1979). This concentration must *include* emissions from major emitting facilities upon which construction

commenced prior to January 6, 1975 (even those not yet operational by the date of the first PSD application), and *exclude* emissions from major emitting facilities that commence construction after January 6, 1975. CAA § 169(4), 42 U.S.C. § 7479(4); S. Rep. No. 95-127, at 97-98 (1977), *reprinted in* 3 A Legislative History of the Clean Air Act Amendments of 1977, at 1471-72 (1978). Emissions from the latter (exclude) category of sources must, under Congress' definition, instead "be counted against the maximum allowable increases in pollutant concentrations established under this part" – i.e., against the PSD increments. CAA § 169(4), 42 U.S.C. § 7479(4); *Ala. Power*, 636 F.2d at 376-77.

Industry expressed concern that the latter portion of Congress' definition could adversely affect future development if it were interpreted to deny the idea of a "negative increment" (i.e., the increment expansion concept). Industry explained:

After defining the baseline to be the ambient concentrations of [pollutants] in existence at the time the first applicant for a nondeterioration permit is filed, this section goes on to state that * * * [pollutants] emitted from any major emitting facility on which construction is commenced after January 6, 1975, will not be included in the baseline, but must be subtracted from the available increment. Thus even when an existing unit is shut down, creating an emission reduction below baseline, its replacement unit is classed as a new source and therefore must be subtracted from the available increment as if it were above the baseline. Since the increment is a nonrenewable value which, once exhausted, ends future growth, it is foreseeable that in the long run every existing major emitting facility in nondeterioration areas will be forced to cease operations. This could occur because worn-out boilers and other sources vital to operation would not be able to be replaced by new boilers once the increment has been used up – even though the ambient air quality may be better than it was during the

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baseline year, and even though the replacement boiler would probably emit less than the existing boiler.

Surely no one intended this absurd result – yet a careful reading of the language in either version of [the proposed legislation] inescapably leads to this anomalous result. It is clear that the language provides a disincentive to modernize older inefficient sources. Since owners would be given no credit for cleanup, they would be forced to go to boundless effort to keep such sources operational in order to avoid using up any of that precious allowance for expansion in the area.

Clean Air Act Amendments of 1977: Hearing Before the Subcomm. on Environmental Pollution of the S. Comm. on Environment & Public Works, 95th Cong. 520 (1977), reprinted in 5 A Legislative History of the Clean Air Act Amendments of 1977, at 4170 (1978) (statement of Roger H. Watts, Assistant General Counsel, ITT Rayonier, Inc., for American Paper Institute and National Forest Products Association); accord Clean Air Act Amendments of 1977: Hearings Before the Subcomm. on Health & the Environment of the H. Comm. on Interstate & Foreign Commerce, 95th Cong. 1258 (1977) (similar statement of Roger H. Watts) ("We have raised this point with the Senate Committee on Environment and Public Works, where the provision originated, and have been informally advised that the staff will make the necessary adjustments. We call it to your attention in case the alteration is overlooked, because of the potentially serious impacts from this deceptively innocuous-sounding sentence.").

Congress did not alter the statutory language in response to industry's pleas, but it also left unchanged the language that assigns to the baseline the pollutant levels emitted by pre-January 6, 1975 facilities. *Compare* S. 3219, 94th Cong. § 160(c)(2)(D) (1976) *with* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, tit. I, § 127(a), 91 Stat. 685, 741 (1977) (codified as amended at CAA § 169(4), 42 U.S.C. § 7479(4)). However, the legislative history does suggest that Congress intended its definition of "baseline concentration" to be interpreted in such a way that

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changes in emissions would be the focus of the increment calculus for replaced (and, by implication, modified) sources. In a report on the CAA Amendments of 1977, the Senate Committee on Environment and Public Works explained that emissions from sources that commence construction after January 6, 1975, are not in the baseline but are increment-consuming, and then clarified that "[t]his of cour[s]e does not include facilities built as replacements for sources in existence before January 6, 1975. Only the emissions from such replacement facilities *in excess of those* from the source replaced would be deducted from the increment." S. Rep. No. 95-127, at 97 (1977), *reprinted in* 3 A Legislative History of the Clean Air Act Amendments of 1977, at 1471 (1978) (emphasis added).

ii. Agency Implementation of Congressional Intent

Turning from congressional to administrative intent, we find compelling evidence that EPA has long held to the principles of consumption/expansion in its implementation of the PSD increment program. In iterations of the PSD regulations going back to the 1970s and continuing to the present day, the Agency has described the method of calculating how much increment remains available to prospective permittees as one involving evaluation of increases and decreases in emissions since the baseline date. *See*, *e.g.*, 72 Fed. Reg. 31,372, 31,376-77 (June 6, 2007); 45 Fed. Reg. 52,676, 52,717-20 (Aug. 7, 1980); 43 Fed. Reg. 26,388, 26,400-02 (June 19, 1978). For instance, in the preamble to the 1978 PSD regulations, the Agency explained:

[I]ncrement consumption can be best tracked by tallying changes in the emission levels of sources contributing to the baseline concentration and increases in emissions due to new sources. * * * Thus, to implement the air quality increment approach set forth in the Act, the reviewing authority needs to verify that all changes from baseline emission rates (decreases or increases as appropriate) in conjunction with the increased emissions associated with

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approved new source construction will not violate an applicable increment or NAAQS.

* * * *

* * * Increases in the baseline emissions of sources contributing to the baseline concentration will also consume increment * * *. Conversely, reductions in the baseline emissions of sources existing [at the time of baseline establishment] generally expand the available PSD increment(s).

43 Fed. Reg. at 26,400-01; *accord* NSR Manual at C.10 ("The amount of PSD increment that has been consumed in a PSD area is determined from the emissions increases and decreases [that] have occurred from sources since the applicable baseline date.").

The Agency confirms this approach in its most current pronouncements on this topic, contained in the preamble to a rule proposing to clarify the PSD increment analysis. *See generally* 72 Fed. Reg. 31,372 (June 6, 2007). In a background section discussing existing practice, EPA identifies the compilation of "emissions inventories" as an important, long-established element of the increments analysis, as follows:

The inventory of emissions includes emissions from increment-affecting sources at two separate time periods – the baseline date and the current period of time. For each source that was in existence on the relevant baseline date * * *, the inventory includes the source's actual emissions on the baseline date and its current actual emissions. The change in emissions over these time periods represents the emissions that consume increment (or, if emissions have gone down, expand the available increment). For sources constructed since the relevant baseline date, all their current actual emissions consume increment and are included in the inventory.

Id. at 31,377; *accord* NSR Manual at C.31-.36 (discussing selection of sources for PSD emissions inventories).

In addition, the Agency explains that in the past, it "never adopted detailed regulations establishing a specific methodology that sources and reviewing authorities must use to calculate an increase in concentrations for purposes of determining compliance with PSD increments." 72 Fed. Reg. at 31,378. Rather, it chose to describe its recommended approaches in guidance documents, leaving room for permitting authorities to exercise discretion in each unique circumstance.³⁷ See id. at 31,376. These representations tend to minimize the importance of the "plain language" upon which Sierra Club leans so heavily in this instance.

iii. Plausible Alternative Interpretation

We are not convinced that the statutory, regulatory, and preamble language that Sierra Club highlights is so clear and unambiguous. As Sierra Club rightly points out, "[f]or purposes of PSD permitting, [the term] 'construction' includes modifications." Reply to NMU at 29 n.13 (citing CAA §§ 169(2)(C), 111(a)(4), 42 U.S.C. §§ 7479(2)(C), 7411(a)(4); 40 C.F.R. § 52.21(b)(8)). Therefore, references in the statute, regulations, and preamble to sources upon which "construction" commenced or took place after a relevant baseline date, *see* CAA § 169(4), 42 U.S.C. § 7479(4) (last sentence); 40 C.F.R. § 52.21(b)(13)(ii)(a); 72 Fed. Reg. at 31,377 (last sentence of fragment quoted in Part II.B.1.d.ii above), may be reasonably interpreted to include not only newly built sources, but also modified sources. Assuming

³⁷ Indeed, EPA historically has "given reviewing authorities substantial leeway within the PSD program to select data and emissions calculation methodologies that they believe are representative of actual emissions." 72 Fed. Reg. at 31,386. In proposing new regulations to refine the PSD increment modeling procedures, the Agency has signaled an interest, going forward, in making more uniform the methods by which permitting authorities may conduct these analyses. *See id.* at 31,378. In so doing, however, the Agency has retained its basic approach to increments as one that takes into account emissions increases and decreases after applicable baseline dates. *E.g., id.* at 31,380, 31,384 85. At this writing, EPA has not finalized these proposed regulations.

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arguendo that this interpretation is appropriate for all three textual references (which we need not decide), such a reading would not necessarily dictate the result Sierra Club advocates.

Instead, one could reasonably construe the statutory, regulatory, and preamble language to mean that all actual emissions from the modifications to a source consume increment, not that all actual emissions from the modifications to the source plus actual emissions from the portions of the source that were not modified consume increment. In this way, the emissions in question could be specifically tied back to the modifications, and only those emissions would be considered incrementconsuming. This reading strikes us as plausible. Sierra Club's "plain" language reading, on the other hand, produces results that confound the very sense and policy undergirding a workable increment consumption scheme. Were Sierra Club's views to prevail, no increment credit would be given for sources that shut down, and emissions already counted in the baseline concentration would be counted again against the PSD increment - in effect, double counting. See OA Tr. at 29-35. This seems a manifest unfairness and does violence to what we must assume to be a prudently conceived and administered system.

iv. Conclusion on "Plain Language"

In light of all the foregoing factors, it seems apparent that the Agency, implementing Congress' intent, designed the increment calculus to unfold in a very different way than that urged by Sierra Club. We therefore find Sierra Club's "plain language" argument to be unpersuasive. *See, e.g., In re Rochester Pub. Utils.*, 11 E.A.D. 593, 603-08 (EAB 2004) (Board generally will give effect to unambiguous regulatory language, but where the meaning of a regulation is unclear, the Board must construe the regulation in light of its context and purpose), *appeal dismissed by stip. sub nom. Minn. Ctr. for Envtl. Advocacy v. EPA*, No. 05-1113 (8th Cir. Jan. 12, 2005).

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v. Remand for Record Clarification

All this being said, we nonetheless find fault in the Department's rather cryptic explanation of the methodology for its increment calculus. MDEQ failed to provide even brief explanations of the reasons why it selected 1973 and 2006 as the relevant years from which to draw comparative emissions data, whether those data consisted of twelve-month averages or one-month or one-day snapshots, or why the Department did not average two years of pre- and post-modification emissions data to calculate "actual emissions," as indicated by the Agency's methods and guidelines for undertaking this calculus. *See* 40 C.F.R. § 52.21(b)(13)(ii), (21); *see also id.* pt. 51 app. W § 8.1.2.i & tbl. 8-2; 45 Fed. Reg. at 52,717-19; NSR Manual at C.10-.11, .35-.36, .44-.50.

The Board has long held that the administrative record for a final permit must reflect the permit issuer's "considered judgment," meaning the permit issuer has an obligation to articulate with reasonable clarity the reasons for its conclusions and the significance of the crucial facts it relied upon in reaching those conclusions. See, e.g., In re Wash. Aqueduct Water Supply Sys., 11 E.A.D. 565, 586-90 (EAB 2004); In re Ash Grove Cement Co., 7 E.A.D. 387, 417-18 (EAB 1997); In re Austin Powder Co., 6 E.A.D. 713, 720 (EAB 1997); In re GSX Servs. of S.C., Inc., 4 E.A.D. 451, 453-54 (EAB 1992); see also In re Chem. Waste Mgmt., Inc., 2 E.A.D. 575, 579 (Adm'r 1988); In re Carolina Power & Light Co., 1 E.A.D. 448, 451 (Acting Adm'r 1978). Moreover, it remains a perennial and important requirement that permit issuers "briefly describe and respond to all significant comments on the draft permit" in their response-to-comment documents. 40 C.F.R. § 124.17(a)(2). The Board has construed this provision as meaning that responses to comments must address the issues raised in a meaningful fashion and, though perhaps brief, must nonetheless be clear and thorough enough to adequately encompass the issues raised by commenters. See, e.g., Wash. Aqueduct, 11 E.A.D. at 586-90 (remanding for failure to respond to commenter's data sets showing differing metals levels in facility effluent); In re Steel Dynamics, Inc., 9 E.A.D. 165, 174-81 (EAB 2000) (remanding for failure to address commenter's alternative calculation of potential to emit lead); In re

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RockGen Energy Ctr., 8 E.A.D. 536, 555-58 (EAB 1999); *In re Tallmadge Generating Station*, PSD Appeal No. 02-12, at 8-12, 22-28 (EAB May 21, 2003) (Order Denying Review in Part and Remanding in Part).

In the present case, many of the facts and analyses underlying MDEQ's various conclusions about the PSD increment calculus are missing from the permit record, including the response-to-comments document. Their absence, particularly in the face of Sierra Club's significant comments, is clear error. Accordingly, we remand this issue to MDEQ for reevaluation and clarification. We expect that, on remand, the Department will analyze with as much precision as reasonably possible the consumption/expansion of PSD increments and explain its analysis in a clear and meaningful fashion, including references to relevant statutory and regulatory provisions and Agency guidance where appropriate.

2. Modeling of Source Impacts Using "Maximum" or "Worst-Case" Emissions

Next, Sierra Club argues that the source impact analysis conducted for the proposed CFB boiler fails to reflect "maximum" or "worst-case" emissions and, as such, is "contrary to law and established EPA policy." Pet'n at 42. As support for this position, Sierra Club cites the NSR Manual, which provides the following guidance in a section on "Source Data" inputs to the air quality analysis:

A source's *emissions rate* as used in a[n air quality] modeling analysis for any pollutant is determined from the following source parameters (where MMBtu means "million Btu's heat input"):

- *emissions limit* (e.g., *lb/MMBtu*);
- *operating level* (e.g., *MMBtu/hour*); and
- *operating factor* (e.g., *hours/day*, *hours/year*).

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* * * *

For both NAAQS and PSD increment compliance demonstrations, the *emissions rate* for the proposed new source or modification must reflect the <u>maximum</u> <u>allowable</u> operating conditions as expressed by the federally enforceable *emissions limit*, *operating level*, and *operating factor* for each applicable pollutant and averaging time. The applicant should base the emissions rates on the results of the BACT analysis * * *.

NSR Manual at C.44-.45 (quoted in Pet'n at 43). Sierra Club also cites an Agency rule revising the *Guideline on Air Quality Models*, which states the following with respect to "Source Data" inputs to air models: "For point source applications[,] the load or operating condition that causes maximum ground-level concentrations [of air contaminants] should be established. As a minimum, the source should be modeled using the design capacity (100 percent load)."³⁸ 70 Fed. Reg. 68,218, 68,240 (Nov. 9, 2005) (codified at 40 C.F.R. pt. 51 app. W § 8.1.2.a) (quoted in part in Pet'n at 43).

The parties do not dispute that worst-case emissions should be employed in the modeling analyses conducted to demonstrate a facility's compliance with the NAAQS and PSD increments. *See* Pet'n at 42-45; MDEQ Resp. at 20-22; Reply to MDEQ at 22-24; NMU Resp. at 26; Reply to NMU at 30-33. They differ, however, on whether the emissions

³⁸ EPA originally published its *Guideline on Air Quality Models* in April 1978 and incorporated it by reference into the PSD regulations in June 1978. Revision to the Guideline on Air Quality Models, 70 Fed. Reg. 68,218, 68,218 (Nov. 9, 2005); *see* 40 C.F.R. § 52.21(*l*)(1) (specifying that all estimates of ambient concentrations must be based on applicable air quality models, data bases, and other requirements set forth in the Agency's *Guideline*, which is codified in 40 C.F.R. pt. 51 app. W); *see also In re Prairie State Generating Co.*, PSD Appeal No. 05 05, slip op. at 132 (EAB Aug. 24, 2006), 13 E.A.D. (noting that although the *Guideline on Air Quality Models* has been promulgated as codified regulatory text in Appendix W, it "provides permit issuers broad latitude and considerable flexibility in application of air quality modeling"), *aff'd sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007).

rates used in the air models in this particular case actually represented the proposed CFB boiler's maximum worst-case emissions rates or some lesser, non-worst-case rates.

Sierra Club takes the position that the modeling performed for the CFB boiler did not incorporate worst-case emissions because MDEQ used the BACT emissions limits set forth in NMU's permit, multiplied by the maximum heat input, to model the boiler's maximum emissions. Pet'n at 43-44. The permitted emissions limits, however, have relatively long averaging periods - twelve months, thirty days, and twenty-four hours for SO₂, and twelve months or an unspecified "Test Protocol" interval³⁹ for PM, PM_{10}/PM_{25} , CO, and NO_x – whereas the relevant NAAQS and PSD increments have averaging periods as short as one hour (for CO), three hours (for SO₂), or eight hours (also for CO), in addition to longer twentyfour hour or annual averaging periods (for SO₂, PM₁₀, and NO₂). Compare Permit spec. cond. 1.1a-.1j, at 6 (BACT emissions limits for PM, PM₁₀, PM_{2.5}, SO₂, NO₃, and CO) with 40 C.F.R. §§ 50.4-.8, .11 (NAAQS for SO₂, PM₁₀, PM_{2.5}, CO, and NO₂) and 40 C.F.R. § 52.21(c) (increments for PM_{10} , SO_2 , and NO_2). Thus, in Sierra Club's view, the Department's approach does not align with, or satisfy, the appropriate modeling benchmark.

Sierra Club argues that modeled emissions limits can only represent "worst-case" emissions when they incorporate averaging times that are equal to or shorter than those of the compliance standards against which they are being measured (here, the NAAQS and PSD increments). Pet'n at 43-45; Reply to MDEQ at 23-24; Reply to NMU at 30-33; OA Tr. at 36-38. Sierra Club contends that longer averaging periods can mask

³⁹ The PSD permit specifies that "[s]tack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods." Permit spec. cond. 1.9, at 8. NMU relies on that permit condition, in conjunction with EPA's standard test methods, to argue that the length of the test protocol intervals are not, in fact, unspecified. For instance, NMU claims that the sampling time for PM emissions must be at least 120 minutes. NMU Resp. at 26 (citing 40 C.F.R. § 60.50Da(b)(2)(i)). Neither NMU nor MDEQ, however, provide any other specific information on the federally required length of the averaging periods for PM, $PM_{10}/PM_{2.5}$, CO, or NO_x.

shorter-term emissions spikes (e.g., an emissions limit averaged over a twelve or twenty-four hour period can be met even if emissions are extremely high for an hour or two, as long as emissions are sufficiently low for the remainder of the twelve or twenty-four hours in the averaging period). *See* Reply to MDEQ at 23; Reply to NMU at 30-33. It is the shorter-term spikes, however, that constitute the facility's "maximum" or "worst-case" emissions, claims Sierra Club, and it is those shorter-term spikes that Sierra Club argues are not captured and appropriately modeled in the source impact analyses conducted for NMU's proposed boiler. *See* Pet'n at 43-44; Reply to MDEQ at 23-24.

Sierra Club submitted comments along these lines during the public review period for NMU's draft PSD permit and also included a suggestion that the maximum hourly heat input rate be incorporated into the permit as an enforceable limit. *See* SC Cmts. at 36-39. MDEQ's total response to the group's comments consisted of the following two sentences: "The maximum hourly heat input rate and the hourly emissions are limited by the size of the equipment. A permit limit is not required." RTC Doc. at 15. In so responding, the Department chose not to directly engage Sierra Club's contention that averaging periods exceeding an hour in length cannot provide a basis for calculating maximum emissions.

MDEQ takes a different tack now, in response to Sierra Club's petition. The Department flatly contradicts the group's assertion that the air quality analysis used NMU's permitted emissions limits to model the boiler's SO₂ impacts. MDEQ Resp. at 21. Instead, the Department states that the modeling incorporated the "maximum, worst-case, *hourly* emission rate of SO₂ emissions," as documented in NMU's permit application and the MDEQ Air Dispersion Analysis Summary. *Id.* (emphasis added). Those documents list the maximum hourly emission rate for SO₂ as 8.78E+01 pounds per hour (or 87.8 pounds per hour), which equates to a modeled emission rate of 11.06 grams per second.⁴⁰

 $^{^{40}}$ To convert an emissions rate measured in pounds per hour to the equivalent rate measured in grams per second, multiply *x* pounds per hour by 1 hour per 3,600 (continued...)

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Permit Appl. § 6.3 tbl. 6-4, at 64; Air Analysis Summary at 1-2. NMU's permit application explains:

The maximum emission rates have been determined on a wors[t] case basis considering each type of fuel source (i.e., highest lb/hr rate from wood, coal, natural gas). * * *

* * * *

For each pollutant with standards that have an annual averaging period, it was conservatively assumed that the maximum hourly emission rate would occur continuously (i.e., 24 hours per day and 365 days per year).

Permit Appl. § 6.3, at 64. In its response brief, MDEQ explains further that the source impact modeling assumed continuous operation of the boiler (a conservative assumption, since the boiler is not authorized to operate continuously) along with the burning of 3.5% sulfur by weight coal (another conservative assumption, since the boiler will burn coal with no more than 1.5% sulfur by weight). MDEQ Resp. at 21-22. Taken together, these assumptions guarantee, in MDEQ's view, that the source impacts of the proposed boiler will fall well under the NAAQS and PSD increments. *Id.* at 22.

As a threshold matter, questions pertaining to the appropriate pollutant emissions rates and other inputs to air quality models raise scientific and technical concerns that generally are best left to the specialized expertise and reasoned judgment of the permitting authority. Indeed, the Board has a well-established body of case law articulating

⁴⁰(...continued) seconds by 453.59 grams per pound. Thus:

87.7 lb/hr * 1 hr/3,600 sec * 453.39 g/lb 11.06 g/sec

Permit Appl. § 6.3, at 64.

deference in such circumstances, absent some strong evidentiary showing or argument by the petitioner that the permit issuer clearly erred in its technical analysis. E.g., In re Carlota Copper Co., 11 E.A.D. 692, 720 (EAB 2004) (Board "traditionally defer[s] to the technical expertise of the permit issuer in the absence of compelling or persuasive evidence or argument to the contrary"), appeal docketed, No. 07-1524 (S. Ct. June 6, 2008); In re Phelps Dodge Corp., 10 E.A.D. 460, 517-19 (EAB 2002) (same); In re Town of Ashland Wastewater Treatment Facility, 9 E.A.D. 661, 667 (EAB 2001) (Board assigns "heavy burden" to petitioners seeking review of technical issues; "clear error or a reviewable exercise of discretion is not established simply because the petitioner presents a difference of opinion or alternative theory regarding a technical matter"); In re Envotech, LP, 6 E.A.D. 260, 284 (EAB 1996) (in general, Board will defer to permit issuer in technical areas "absent compelling circumstances"). In the circumstances of this case, however, the spareness of MDEQ's response to Sierra Club's detailed comments on this issue, along with the thinness of the permitting record and the shifting explanations by the Department, do not provide the necessary foundation for us to extend such deference.

Here, Sierra Club raised serious and substantial concerns touching on whether the modeled emissions (not just SO_2 emissions, but also PM_{10} , NO_x , and CO emissions, which MDEQ failed altogether to address in its response to comments or this appeal) are truly "worst-case" emissions, as all parties agree they must be for the modeling to be valid. Neither the Department's response to comments, nor the permitting documents the Department references in its response to the petition, provide a straightforward answer to Sierra Club's concerns in this regard. For example, none of the record materials directly address the notion that long averaging periods may provide unsuitable bases for analyzing worst-case emissions impacts that occur over shorter time periods, particularly in the face of a host of NAAQS and increment compliance standards expressly setting short-duration averaging periods.

Moreover, MDEQ points out now (though it did not do so in its response to comments) that the record materials identify 87.8 pounds per

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hour as the proposed boiler's maximum hourly SO_2 emissions rate. MDEQ Resp. at 21 n.74 (citing Air Analysis Summary at 2; Permit Appl. § 6.3 tbl. 6-4, at 64). The provenance of this figure is not immediately clear.⁴¹ At oral argument, MDEQ stated that some of these assumptions indeed played a role in the derivation of the worst-case emissions rates, explaining specifically that the 92% control efficiency condition is drawn from the New Source Performance Standards ("NSPS") applicable to NMU's facility. OA Tr. at 87; *see* Permit Appl. tbl. 4-1 n.1, at 24 ("SO₂ emission rates are based on 3.5 percent (average max.) sulfur coal and 92 percent reduction requirement per NSPS. The limits are also based on a 30-day rolling average.").⁴² For its part, Sierra Club takes issue with the 92% reduction assumption and contends that a true "worst-case" emissions rate is an uncontrolled rate, which, by its calculations, would be 512.5 pounds of SO₂ per hour. Reply to MDEQ at 24 & n.12; Reply to NMU at 32 & n.18; OA Tr. at 113.

In our view, the record for this permit lacks a coherent, persuasive explanation of MDEQ's decision to rely on particular emissions rates for each of the relevant pollutants (i.e., not just SO_2 but also PM_{10} , NO_x , and CO^{43}) as "worst-case" values suitable for use in the source impact

⁴¹ One can perhaps piece together from various sections of the permit application some of the operating conditions that seem to have been assumed in the derivation of this purported "worst case" figure. These conditions include the burning of coal with a maximum sulfur content of 3.5% and the use of pollutant control equipment that would achieve 92% reduction of SO₂ emissions, with boiler emissions being averaged over a thirty day rolling time period. *See* Permit Appl. §§ 4.1 tbl. 4 1 & n.1, 5.3.1, 6.3, at 24, 42, 64 (information gleaned from emissions estimates section, control technology review section, and ambient impact analysis section of application).

⁴² At oral argument, MDEQ also denied that the 87.8 pounds/hour figure reflected in any way a thirty day rolling average, insisting instead that it represents the proposed boiler's maximum *hourly* emissions. OA Tr. at 88 89. We are unable to determine the truth of the matter from any of the materials in this record.

⁴³ As noted in our air quality introduction in Part II.B above, the proposed CFB boiler is considered a "major modification" that will result in a significant net increase in emissions of these four pollutants. Consequently, the CAA's ambient air quality (continued...)

modeling analysis. Instead, the record contains significant comments from Sierra Club questioning these matters and a dismissive, erratic, and inadequate response to those comments from the Department. See SC Cmts. at 36-39; RTC Doc. at 15. The Department's late-proffered explanations in briefs and argument before this Board fail to adequately clarify matters and, in any event, are incapable of repairing the record deficiencies. See, e.g., In re Wash. Aqueduct Water Supply Sys., 11 E.A.D. 565, 589 (EAB 2004) (a permit issuer "cannot through its arguments on appeal augment the record upon which the permit decision was based"). Accordingly, we have no sound basis upon which to defer to the Department's technical judgment on this foundational aspect of the air quality analysis. As noted in Part II.B.1 above, a permitting authority has a responsibility to explain its decisionmaking processes in ways that are meaningful, clear, and thorough enough to adequately address the issues raised by commenters. MDEQ failed to achieve this standard with respect to the question of worst-case emissions in the air models for NMU's boilers. We remand these issues to the Department for reevaluation and clarification as necessary.

3. Preconstruction Monitoring

We turn next to the issue of preconstruction monitoring. The CAA and implementing regulations establish a program for PSD permit applicant collection and submission of twelve months of ambient air quality monitoring data, for the year *preceding* the date of permit application, showing pollutant concentrations at the site of the proposed facility and in areas that may be affected by emissions from that facility. CAA § 165(a)(7), (e), 42 U.S.C. § 7475(a)(7), (e); 40 C.F.R. § 52.21(m). These data may then be used, in conjunction with other information, to demonstrate the facility's compliance with the NAAQS and PSD increments. *See* NSR Manual at C.16-.21.

⁴³(...continued) requirements apply with respect to each of these pollutants.

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A permitting authority has discretion to exempt a facility from the preconstruction monitoring requirements if either of the following two conditions is present: (1) the facility's modeled emissions predict air quality impacts that are lower than certain pollutant levels known as "significant monitoring concentrations" ("SMCs") or "monitoring de minimis levels"; or (2) the existing pollutant concentrations in the areas potentially affected by the facility are less than the SMCs.⁴⁴ 40 C.F.R. § 52.21(i)(5)(i)-(ii); see In re EcoEléctrica, LP, 7 E.A.D. 56, 61-65 (EAB 1997); Office of Air Quality Planning & Standards, U.S. EPA, EPA-450/4-87-007, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD) § 2.1.1, at 4 (May 1987) [hereinafter Ambient Monitoring Guidelines]; NSR Manual at C.16-.17 & tbl. C-3. As a general matter, the results of the preliminary air quality analysis (also discussed in Part II.B above) are used to determine whether an applicant may be exempted from preconstruction monitoring. In re Prairie State Generating Co., PSD Appeal No. 05-05, slip op. at 122 n.100 (EAB Aug. 24, 2006), 13 E.A.D. , aff'd sub nom. Sierra Club v. EPA, 499 F.3d 653 (7th Cir. 2007); NSR Manual at C.18, .24.

In the instant case, the preliminary air quality analysis indicated that combined emissions from NMU's Ripley Heating Plant, including the existing boilers and the proposed CFB boiler, would result in ambient concentrations of CO, PM_{10} , and NO_x that are each less than their

⁴⁴ As designed by EPA, the SMCs are a different animal, as it were, and enter the picture at a different point, than the "significant impact levels" or "SILs" mentioned above in the introduction to the air quality analysis discussion. *See supra* Part II.B; *see also* 40 C.F.R. § 52.21(i)(5)(i) (ii) (SMCs); NSR Manual tbls. C 3 & C 4, at C.17, .28 (SMCs; SILs for Class II areas). SMCs are used for the specific purpose of evaluating whether a proposed facility should be required to conduct preconstruction ambient monitoring, whereas SILs are consulted by permitting authorities at an earlier stage to determine whether a proposed facility should be required to perform a full impact analysis or just a preliminary impact analysis. *See* NSR Manual fig. C 3, at C.27 (flow chart showing that determination of whether modeled impacts exceed SILs precedes use of SMCs to determine need for preconstruction monitoring); *see also In re EcoEléctrica*, *LP*, 7 E.A.D. 56, 62 66 & nn.5, 10 11 (EAB 1997); 73 Fed. Reg. 28,321, 28,324 (May 16, 2008).

respective SMCs.⁴⁵ See Permit Appl. §§ 6.5.1, 6.5.4-.5, at 70-71, 74-76. The preliminary analysis also indicated that the proposed boiler alone, as well as in combination with the existing boilers, would generate SO₂ impacts greater than the SMC for that pollutant.⁴⁶ See *id.* § 6.5.2 & tbl. 6-10, at 71-72; MDEQ Resp. Ex. 9, at 2. Assuming these figures accurately portray the facts, it would appear that NMU had a legal obligation to conduct preconstruction monitoring for SO₂ but not for CO, PM₁₀, or NO_x.

In comments on the draft permit, Sierra Club submitted detailed observations about the preconstruction monitoring requirements and pointed out that the permitting record for NMU's proposed boiler lacked any explicit mention of, or demonstration of compliance with, those requirements. *See* SC Cmts. at 39-44. Sierra Club consequently argued that the air quality determination was "deficient" and that MDEQ therefore could not properly issue the permit to NMU. *Id.* at 42. MDEQ's full response to the Club's detailed comments stated that its own "experience with monitoring in the Upper Peninsula shows consistent background levels across a large geographical area including the location of this facility. Therefore, [the Department] did not require pre-

⁴⁵ Notably, the record materials do not explicitly mention the SMCs for these pollutants or where NMU's projected emissions fall with respect to the SMCs. Instead, they focus on the SILs and report that projected emissions are less than the relevant SILs. Upon further inquiry, we find that the SMCs for CO, PM_{10} , and NO_x are greater in magnitude than their comparable SILs, so emissions of these pollutants at levels below the SILs would necessarily also fall below the SMCs. *Compare* 40 C.F.R. § 52.21(i)(5)(i) (ii) (SMCs) *with* NSR Manual tbl. C 4, at C.28 (SILs).

⁴⁶ Again, the record materials do not mention the SMC for SO₂ or where NMU's projected emissions fall with respect to that SMC. Upon investigation, we find that the SMC for SO₂ averaged over 24 hours is greater than the comparable SIL for that pollutant (13 μ g/m³ versus 5 μ g/m³), but NMU's projected 24 hour average emissions of SO₂ (61 μ g/m³) exceed both the SMC and the SIL.

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construction monitoring. No written waiver was requested by the permit applicant, and none was issued by [MDEQ]." RTC Doc. at 15.

On appeal, Sierra Club essentially repeats its comments on the draft permit, choosing to continue to press its points in light of the Department's failure, in its view, to adequately respond to them. Accordingly, Sierra Club urges the Board to remand NMU's permit on several grounds. First, Sierra Club argues that the "plain language" of the CAA and implementing regulations directs PSD permit applicants to install a series of continuous ambient air quality monitors around the areas of their proposed facilities and gather twelve months of data therefrom for the sole purpose of determining whether the facilities will violate the NAAQS or PSD increments. Pet'n at 45-48; Reply to MDEQ at 25-26. In this line of argument, data gathered for other purposes (such as state air quality planning) or from monitors that are not in areas affected by the proposed facility (i.e., that are not "site-specific") would be unsuitable for use in fulfilling the preconstruction monitoring requirement. Pet'n at 46-48.

Second, Sierra Club acknowledges the existence of long-standing Agency guidance that suggests, contrary to Sierra Club's plain language argument, that the requirement to collect site-specific monitoring data can be waived in certain circumstances. Pet'n at 48-50; Reply to MDEQ at 26-28; OA Tr. at 16-21. Such waiver can occur in cases where existing ambient data are deemed sufficiently representative of air quality in the targeted area - in terms of the sufficiency of the monitoring locales selected and the quality and currentness of the monitoring data - to legitimately be substituted for site-specific data. See NSR Manual at C.18-.19; Ambient Monitoring Guidelines § 2.4, at 6-9; see also, e.g., In re Knauf Fiber Glass, GmbH, 8 E.A.D. 121, 145-48 (EAB 1999); In re Haw. Elec. Light Co., 8 E.A.D. 66, 97-105 (EAB 1998); In re Hibbing Taconite Co., 2 E.A.D. 838, 850-51 (Adm'r 1989). Sierra Club refuses to concede that permit issuers have legal authority to issue such waivers, Pet'n at 49 n.7, but, in the event this argument does not prevail, Sierra Club contends in the alternative that MDEQ failed to fulfill the requirements of this Agency policy. According to Sierra Club, the

Department erroneously failed to include any explicit findings in the permitting record on the validity, sufficiency, or representativeness of any substitute data that might have been used to justify NMU's *de facto* preconstruction monitoring waiver. *Id.* at 48-50; Reply to MDEQ at 26-28.

Third, Sierra Club argues that even if MDEQ had attempted to demonstrate fulfillment of the conditions of EPA's waiver policy in this case, the Department would have been constrained to conclude that the substitute data were, in fact, not representative. Pet'n at 50-54. Sierra Club begins with the issue of monitor location, noting that the record contains no evidence of monitors used other than an oblique reference to "background concentrations" collected at Escanaba, Michigan (SO₂); Two Rivers, Wisconsin (NO_x); Green Bay, Wisconsin (PM_{10}); and Milwaukee, Wisconsin (CO and lead). Id. at 51 (citing Permit Appl. app. C); Reply to MDEQ at 27-28. Sierra Club points out that Agency policy allows data from off-site monitors to be used if those data represent the locations of: (a) maximum concentration increase from the proposed facility; (b) maximum air pollutant concentration from existing sources; and (c) maximum combined impact area (existing sources plus proposed facility). Pet'n at 51 (citing Ambient Monitoring Guidelines § 2.4.1, at 6-8; Hibbing Taconite, 2 E.A.D. at 850-51). The record contains no evidence, claims Sierra Club, that these particular monitors, or any others for that matter, satisfy any of these requirements.⁴⁷ Pet'n at 51; see OA Tr. at 18-21, 114-15. Sierra Club similarly asserts that the record contains no evidence demonstrating fulfillment of Agency guidelines on the requisite quality (in terms of monitor calibration, data recovery, and

⁴⁷ Sierra Club also observes that NMU's boiler will be situated in a "multisource impact area," meaning its impacts will be added to those of two already existing coal fired plants (Marquette and Presque Isle) and two mining companies (Empire Iron and Tilden Mining). Pet'n at 51 52. EPA's *Ambient Monitoring Guidelines*, claims Sierra Club, discourage substitution of off site monitoring data in such circumstances, but MDEQ failed to acknowledge or abide by this policy. *Id.* The Department also purportedly ignored certain other Agency guidelines regarding monitor selection in areas that have multiple air pollution sources and flat terrain. *Id.* at 52 (citing *Ambient Monitoring Guidelines* § 2.4.1, at 6 8).

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other standards) or *currentness* (in terms of most recent three years) of the data collected from these or any other off-site monitors. Pet'n at 53-54.

In response, MDEQ dismisses all of Sierra Club's arguments as baseless. First, the Department claims that nothing in the CAA requires that preconstruction monitoring data be collected by a permit applicant for the sole purpose of analyzing its proposed facility's source impacts, as Sierra Club contends. MDEQ Resp. at 22. Where existing representative data collected by others exist, any requirement imposed on an applicant to collect additional monitoring data would, in MDEQ's view, "needlessly" and "wasteful[ly]" require the applicant to "expend resources." *See id.* at 23. The Department then asserts that existing data collected by others does exist in this case, from the years 2003 through 2005, and it sanctioned their use as sufficiently representative for NMU's situation. *Id.* at 23-25; OA Tr. at 91-99.

MDEQ explains that on August 21, 2006, it sent a table of background pollutant concentrations to NMU for use in the source impact analysis. Id. at 23-24 (citing Permit Appl. at 69 & app. C). The table lists three monitoring samples from the years 2003 through 2005 for each of five pollutants and selects the highest sample value for each pollutant as the appropriate "background concentration" for NMU's analysis. See Permit Appl. tbl. 6-8, at 69, & app. C. For example, MDEQ chose readings collected in 2003-2004 from an SO₂ monitor in Escanaba, Michigan, 65.3 kilometers distant from NMU's campus, along with a reading collected in 2005 from an SO₂ monitor in Michigan's Seney National Wildlife Refuge, 158.5 kilometers distant, to represent the background SO₂ concentration in the ambient air around the proposed boiler in Marquette. Id. As the Department observes, it "determined that regional monitoring data from monitors located in Michigan and Wisconsin [were] appropriate for NMU's air quality analysis because [those data were] either representative of air quality near NMU or even more conservative because [they] reflected higher concentrations of criteria pollutants in the ambient air than those present in Marquette." MDEQ Resp. at 24; accord OA Tr. at 91-99.

MDEQ did not release this kind of information in its response to comments. There, the Department simply remarked on the existence of "consistent background levels" of pollutants across the Upper Peninsula, including the areas around NMU's campus. RTC Doc. at 15. In so doing, the Department may have intended to indicate that it had decided to grant NMU an *exemption* from the preconstruction monitoring requirement, pursuant to 40 C.F.R. § 52.21(i)(5)(ii), because the background pollutant concentrations were less than their respective SMCs. This interpretation of events is somewhat appealing in that it lends some consistency to MDEQ's other ambiguous statement that NMU did not request a written waiver from preconstruction monitoring and MDEQ did not issue one – instead, perhaps, the Department, *sua sponte*, simply granted an exemption and made a waiver unnecessary. *See* RTC Doc. at 15.

The situation is muddled, however. MDEQ's response on appeal seems to indicate that preconstruction monitoring was, in fact, conducted after all, for all pollutants, pursuant to a *de facto* waiver allowing the use of existing ambient data from air monitors in Escanaba, Two Rivers, Green Bay, Milwaukee, and elsewhere. *See* MDEQ Resp. at 23-25. Matters are further confused by NMU's contentions that its emissions will result in concentrations less than the SMCs for all pollutants except SO₂, and thus MDEQ required preconstruction monitoring only for that pollutant, which the Department appropriately conducted using representative off-site data. *See* NMU Resp. at 27 (citing Permit Appl. at 69). Put another way, and attempting to harmonize a discordant presentation, NMU may be claiming that MDEQ granted it a preconstruction monitoring *exemption* for PM₁₀, CO, and NO_x emissions and a *waiver* for site-specific SO₂ emissions.

At the outset, we reject Sierra Club's contention that the plain language of the CAA and implementing regulations mandate the use of site-specific, sole-purpose preconstruction ambient air quality data. *See* Pet'n at 46-48 (quoting CAA § 165(a)(7), (e)(1)-(2), 42 U.S.C. § 7475(a)(7), (e)(1)-(2); 40 C.F.R. § 52.21(m)(1)(i), (iii)-(iv)); Reply to MDEQ at 25-26. In so arguing, Sierra Club overlooks statements of congressional intent to the contrary. H.R. Rep. No. 95-294, at 171 (1977)

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("preconstruction, onsite air quality monitoring may be for less than a year if the basic necessary information can be provided in less time, or it may be waived entirely if the necessary data [are] already available"); H.R. Rep. No. 95-564, at 152 (1977) (Conf. Rep.) (one-year monitoring requirement "may be waived by the [s]tate"). EPA has long implemented the PSD program pursuant to the understanding that representative data may be substituted where circumstances warrant, *see*, *e.g.*, NSR Manual at C.18-.19; *Ambient Monitoring Guidelines* § 2.4, at 6-9, and the Board and its predecessors have long upheld the Agency's guidance to that effect. *E.g.*, *Knauf*, 8 E.A.D. at 145-48; *Haw. Elec.*, 8 E.A.D. at 97-105; *Hibbing*, 2 E.A.D. at 850-52. Sierra Club has failed to persuade us to deviate from these precedents here.

That being said, preconstruction monitoring is yet another element of the PSD permitting program that MDEQ failed to treat with due care in these proceedings. Sierra Club submitted detailed, significant comments on this topic during the public review period, see SC Cmts. at 39-44, but the Department abruptly dismissed them in its response-to-comments document with the vague three-sentence answer quoted above. See RTC Doc. at 15. This state of affairs does not comport with 40 C.F.R. § 124.17(a)(2) and concomitant well-settled Board case law, which place upon permit issuers an obligation to provide meaningful responses to significant comments that articulate with reasonable clarity the facts and circumstances supporting the permit issuers' decisions. E.g., In re Amerada Hess Corp., 12 E.A.D. 1, 14-20 (EAB 2005); In re Wash. Aqueduct Water Supply Sys., 11 E.A.D. 565, 586-90 (EAB 2004); In re Steel Dynamics, Inc., 9 E.A.D. 165, 174-81 (EAB 2000); In re RockGen Energy Ctr., 8 E.A.D. 536, 555-58 (EAB 1999); In re Ash Grove Cement Co., 7 E.A.D. 387, 417-18 (EAB 1997); In re Austin Powder Co., 6 E.A.D. 713, 720 (EAB 1997); In re Tallmadge Generating Station, PSD Appeal No. 02-12, at 8-12, 22-28 (EAB May 21, 2003) (Order Denying Review in Part and Remanding in Part). The Department further clouds matters, rather than clarifies them, in its brief. Accordingly, remand is warranted on this ground. On remand, the Department must reevaluate the issue of preconstruction monitoring for NMU's proposed boiler and explain the ways in which its ultimate decisions on the topic comply with the

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applicable provisions of the statute and regulations and reflect Agency guidance on data representativeness and related matters.

4. Class I Increment Analysis

Finally, Sierra Club challenges MDEQ's analysis of the proposed boiler's effects on PSD increment in several Class I areas. In brief, Sierra Club argues that the Department unlawfully used SILs and arbitrary distances to excuse NMU from preparing increment consumption analyses that otherwise would be mandated by the CAA and its implementing regulations. Pet'n at 54-58; Reply to MDEQ at 29-30.

Under the CAA and its implementing regulations, permit issuers are obliged to notify federal managers of any lands within Class I areas that "may be affected" by emissions from a proposed major emitting facility. CAA § 165(d)(2)(A), 42 U.S.C. § 7475(d)(2)(A); 40 C.F.R. § 52.21(p); *see* 40 C.F.R. § 124.42(a). EPA has interpreted the "may affect" clause as including all facilities proposing to locate within 100 kilometers ("km") – or about 62 miles – of a Class I area, as well as certain large facilities proposing to locate more than 100 km from Class I areas. *See* NSR Manual at E.16. Moreover, as discussed above, permit applicants are legally obligated to demonstrate that their proposed facilities will not cause or contribute to air pollution in violation of any PSD increment, including the Class I increments. CAA § 165(a)(3)(A), 42 U.S.C. § 7475(a)(3)(A); 40 C.F.R. § 52.21(k)(2). This latter requirement applies irrespective of distance.

Of course, as implemented, the PSD program does not mandate that each permitting record contain an increment consumption analysis for every Class I area in the country, regardless of distance from the proposed major emitting facility. As the EPA Administrator stated in a prior case:

> EPA has implicitly countenanced the view that, as a practical matter, pollution sources may be too distant from a specific area to have anything except an imperceptible or insignificant effect on the area in

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question. In other words, the mere possibility of pollution molecules being transported from a source to a [C]lass I area is not, by itself, sufficient reason to trigger the demonstration requirements of the [CAA].

In re Old Dominion Elec. Coop., 3 E.A.D. 779, 781 (Adm'r 1992). Thus, where reasonable, EPA has historically attempted to streamline the PSD permitting process by promulgating specific thresholds, such as SILs, beneath which impacts are deemed to be insignificant and certain complex analyses not necessary.

To date, EPA has promulgated SILs only for Class II areas, which cover most of the country. See NSR Manual tbl. C-4, at C.28. For Class I areas, in lieu of actual SILs, but serving roughly the same function, the Agency has chosen instead to recommend that a full source impact analysis be conducted for any proposed facility that will increase pollutant concentrations in a Class I area by $1 \mu g/m^3$ (24-hour average) or more. *Id.* at E.16-.17; see In re Knauf Fiber Glass, GmbH, 8 E.A.D. 121, 155-56 (EAB 1999). Importantly, however, EPA does not stop with this threshold. The Agency goes on to acknowledge that certain attributes of Class I areas may be sensitive to pollutant increases that are less than $1 \mu g/m^3$. NSR Manual at E.17; see id. at E.10-.12 (discussing special attributes of Class I areas). The Agency consequently suggests that permit issuers consult with federal land managers to decide what specific level of impact analysis is necessary in a given case. *Id.* at E.17-.18.

In the case before us, the Class I areas nearest NMU's Ripley Heating Plant are the Seney National Wildlife Refuge in Seney, Michigan, approximately 55 miles (89 km) away;⁴⁸ Isle Royale National Park on Isle Royale in Lake Superior, an unspecified distance away (although farther

⁴⁸ The record actually contains several estimates of the distance between NMU's facility and Seney National Wildlife Refuge. *See* RTC. Doc. at 13 (refuge is approximately 55 miles (or about 89 km) to east southeast of NMU facility); MDEQ Resp. Ex. 10 (northwest corner of refuge is approximately 93.5 km from NMU); Permit Appl. § 3.1, at 14 & app. C (refuge is about 60 miles away; SO₂ monitor in refuge is 158.5 km away).

than Seney); and the Forest County Potawatomi Community Reservation near Crandon, Wisconsin, at least 100 miles (160 km) away. *See* RTC Doc. at 13; *see also* MDEQ Resp. Ex. 10; 73 Fed. Reg. 23,086 (Apr. 29, 2008) (final Class I designation notice for Forest County).

The permitting record indicates that in May 2007 and/or April 2008, MDEQ contacted federal representatives regarding potential CFB boiler emissions impacts to Isle Royale National Park and Seney National Wildlife Refuge.⁴⁹ See RTC Doc. at 13; Air Analysis Summary at 1-2; MDEO Resp. Ex. 10 (E-mails from/to Steve Kish, MDEO, to/from Jill Webster, U.S. Fish & Wildlife Service (Apr. 10, 2008)). The record indicates further that these representatives reported that they did not expect any adverse impacts to visibility or air quality related values on the basis of the NMU boiler information sent them by MDEQ. RTC Doc. at 13; MDEQ Resp. Ex. 10. Moreover, MDEQ explains that the air quality modeling conducted for NMU's boiler revealed a maximum increase of 0.42 μ g/m³ in the 24-hour average SO₂ concentration at Seney National Wildlife Refuge, the closest Class I area to Marquette. RTC Doc. at 13. This figure, at less than half the informal significance level recommended by EPA, appears to have provided the Department with its rationale for excusing NMU from conducting increment analyses for the Isle Royale, Seney, and Forest County Class I areas.⁵⁰ See id.

On appeal, Sierra Club argues that the $1 \mu g/m^3$ Class I threshold lacks a legal basis and thus MDEQ erred in relying on it. Pet'n at 55. To the extent this is an argument that $1 \mu g/m^3$ is not a regulatory requirement, we agree. *Knauf*, 8 E.A.D. at 156 n.49. However, this figure is a longestablished EPA guideline. NSR Manual at E.16-.17. Importantly, the

⁴⁹ These representatives may or may not have been the federal land managers for the affected areas; the record does not make these points clear. Sierra Club, however, does not take issue with the identity of these parties, and thus we do not address the matter further.

⁵⁰ Sierra Club's contention that MDEQ employed an arbitrary distance threshold of 100 miles to excuse NMU from analyzing impacts to the Forest County Reservation is speculative.
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NSR Manual stresses the need for permit issuers to consult with federal land managers about air quality issues, and MDEQ appears to have adequately fulfilled that responsibility here, as documented in the response to comments and elsewhere in the record. Sierra Club has failed to show clear error in the Department's handling of these issues or other grounds for a grant of review on this basis. *See* 40 C.F.R. § 124.19(a).

III. CONCLUSION

For the foregoing reasons, we remand five components of NMU's PSD permit decision, as summarized below, for further proceedings consistent with this opinion.

First, we remand the permit for MDEQ to reconsider the BACT limitations chosen for SO_2 emissions from the proposed CFB boiler. On remand, MDEQ will be expected to ensure that a rational, defensible BACT determination is made for this pollutant, involving consideration of all requisite statutory and regulatory criteria and giving attention as appropriate to the clean fuels issue. MDEQ will also be expected to clearly document all facets of its BACT-related decisions in the administrative record. In particular, any contention that particular fuel choices or related factors would improperly "redefine the source" must be thoroughly explained and supported with references to suitable legal authority. *See supra* Part II.A.3.

Second, we remand the permit for MDEQ to analyze whether CO_2 and N_2O emissions from the CFB boiler should be limited pursuant to BACT. MDEQ should be guided in these efforts by our recent decision in *In re Deseret Power Electric Cooperative*, PSD Appeal No. 07-03 (EAB Nov. 13, 2008), 14 E.A.D. Included in its evaluation should be MDEQ's assessment whether approval by EPA of CO_2 - and N_2O related provisions in certain existing SIPs constitutes regulation of those pollutants under the Act. MDEQ will be expected to clearly document its decisions in the administrative record. *See supra* Part II.A.4.b. Third, we remand the permit for MDEQ to reevaluate and clarify its analysis of PSD increments consumed/relinquished by the CFB boiler, other boilers in the Ripley Heating Plant, and other sources in relevant affected areas. On remand, MDEQ will be expected to analyze with as much precision as reasonably possible the consumption/expansion of PSD increments and explain its analysis in the record in a clear and meaningful fashion, including references to relevant statutory and regulatory provisions and Agency guidance where appropriate. *See supra* Part II.B.1.

Fourth, we remand the permit so that MDEQ can ensure that the source impact modeling analyses for SO_2 , PM_{10} , NO_x , and CO are conducted on the basis of the maximum, "worst-case" emissions rates of those pollutants. MDEQ will be expected to document its decisions in this regard in a clear and meaningful fashion. *See supra* Part II.B.2.

Fifth, we remand the permit for MDEQ to reevaluate the issue of preconstruction monitoring and explain, in the record, the ways in which its ultimate decisions on this topic comply with the applicable provisions of the statute and regulations and reflect Agency guidance. *See supra* Part II.B.3.

Finally, on each of these five matters, MDEQ is directed to craft new or revised permit terms as necessary, submit any such permit terms and all other findings on remand to public review, and consider and respond to significant public comments in its documentation of the revised final permit decision. Pursuant to 40 C.F.R. § 124.19(f)(1)(iii), an appeal of the Department's decision after remand will be required to exhaust administrative remedies. Accordingly, any party who participates in the remand process and is not satisfied with MDEQ's decision on remand may file an appeal with the Board pursuant to 40 C.F.R. § 124.19. Any such appeal shall be limited to issues within the scope of the Board's remand. Review of all other issues is denied.

So ordered.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **Order Denying Review in Part and Remanding in Part** in the matter of *Northern Michigan University, Ripley Heating Plant*, PSD Appeal No. 08-02, were sent to the following persons in the manner indicated:

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