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June 12, 2008

Hand Delivery Via Federal Express

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

Re: Petition for Review
PSD Permit Number: 60-07 (Michigan)
Northern Michigan University

Dear Ms. Durr:

Enclosed for filing is one original and three copies of Sierra Club's Petition for Review of the above-referenced PSD permit. If you have any questions about this filing or if I can be of any further assistance please call me at 608.256.1003.

Sincerely,
GARVEY McNEIL & McGILLIVRAY, S.C.

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

IN THE MATTER OF: NORTHERN MICHIGAN UNIVERSITY	)	APPEAL NUMBER: _____
	)	PSD PERMIT NUMBER: 60-07

PETITION FOR REVIEW AND REQUEST FOR ORAL ARGUMENT

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INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a) (2007), the Sierra Club ("Petitioner"), petitions for review of the conditions of the Prevention of Significant Deterioration (PSD) Permit Number 60-07 which the Michigan Department of Environmental Quality Air Quality Division ("DEQ") issued to Northern Michigan University (NMU), on May 12, 2008. A copy of the PSD permit is attached as Sierra Club Exhibit 1. The State of Michigan is authorized to administer the PSD permit program pursuant to a delegation of authority by the United States Environmental Protection Agency ("EPA"). The Permit authorizes the applicant to construct a new coal-fired boiler and associated equipment on the NMU campus in Marquette, Michigan. Petitioner contends that the DEQ failed to include necessary permit conditions, make certain necessary findings, made some erroneous conclusions, and failed to undertake certain required analysis, based on DEQ's clearly erroneous conclusions of law, and also that this petition involves important policy considerations that the Board should review.

Petitioner also requests oral argument in the above-captioned matter. Oral argument would assist the Board in its deliberations on the issues presented by the case because the issues raised herein involve important, potentially recurring issues for the Board and the U.S. Environmental Protection Agency are a source of significant public interest, and are of a nature such that oral argument would materially assist in their resolution.

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner satisfies the threshold requirements for filing a petition for review under 40 C.F.R. Part 124. Petitioner has standing to petition for review of the permit decision because Petitioner and its members participated in the public comment period on the draft permit. 40 CFR § 124.19(a). *See generally,* Comments of Sierra Club (attached as Exhibit 2). Notice of the permit decision by the Michigan Department of Environmental Quality (DEQ) was mailed on May 12, 2008 (attached as Exhibit 3). The issues raised by Petitioner below were raised with DEQ during the public comment period. Consequently, the Board has jurisdiction to hear Petitioner's timely request for review. 40 C.F.R. § 124.19(a).

ISSUES PRESENTED FOR REVIEW

Petitioner respectfully requests Board review of the following issues:

(1) The Permit lacks best available control technology (BACT) limits that satisfy the statutory requirements, this Board's prior decisions, and applicable Environmental Protection Agency policy for the following pollutants:

a) Particulate matter smaller than 2.5 microns in diameter (PM2.5);

b) Carbon dioxide (CO2);

c) Nitrous oxide (N2O).

(2) The BACT limit for sulfur dioxide (SO_2) does not satisfy the statutory definition of BACT because it fails to account for clean fuels that the applicant plans to burn at the proposed boiler.

(3) The Permit relies on a "Startup, Shutdown and Malfunction Plan" that was not reviewed by the agency nor subject to public notice, review, and comment prior to issuance of the Permit, in violation of the applicable regulations and this Board's prior decisions.

(4) DEQ erred, as a matter of law, in its attempt to account for the increment-consuming emissions from the nearby Presque Isle Power Plant when calculating increment impacts.

(5) The applicant did not demonstrate that emissions from the proposed emission sources will not cause or contribute to a violation of ambient air quality standards or maximum allowable increase (increment), as required by applicable regulations and EPA policy, because the emission rates used to model air impacts are not enforceable and are not the maximum emission rates during the relevant averaging periods.

(6) Neither the applicant, nor DEQ conducted the mandatory pre-construction ambient air monitoring.

(7) The agency erred, as a matter of law, in failing to notify the Federal Land Manager of the Forest County Potawatomi Tribe Class I area, ensure that the proposed plant does not cause or contribute to violations of increment limits in nearby Class I areas, and substituting unlawful and arbitrary distance limits and Significant Impact Levels for the requirements of the Clean Air Act.

STATEMENT OF FACTS

NMU filed an application for this permit on February 5, 2007. *See* Permit to Install Application for a New Circulating Fluidized Bed Boiler, Northern Michigan University – Ripley Heating Plant (available at http://www.deq.state.mi.us/aps/downloads/permits/CFPP/2007/60-07/PTI%2060-07%20Original%2002-05-2007.pdf) ("Application," attached as Exhibit 4). NMU proposes to construct circulating fluidized bed boiler rated at up to 205 million British Thermal Units (MMBtu) per hour, Application at iv, at the site of existing boilers located at 1401 Presque Isle Avenue, Marquette, Michigan. Ex. 4, Application at 1. The power plant would have a power output equivalent of 10 megawatts and has a proposed maximum operating schedule of 8760 hours per year (i.e., continuously). *Id.* at 3; Public Participation Documents, Permit Application No. 60-07 at 1 (October 19, 2007) ("Statement of Basis" or "SOB," attached as Exhibit 5). The boiler is intended to burn 100% wood chips (biomass) as the primary fuel, and the applicant would like the flexibility to also burn up to 100% of coal and natural gas. *See* Ltr. from Michael G. Hellman, NMU, to Mary Ann Dolehanty, DEQ (February 5, 2007) (accompanying the Application, Ex. 4). Specifically, the applicant explained its plans as follows:

> In support of the Governor's 21st Century Energy Plan, this project will be designed to allow operation on Renewable Resources (specifically wood chips) up to 100% of the total heat input, with the capability to operate on subbituminous coal, and natural gas if the Renewable Resource fuel is unavailable or not economically feasible. The application requests that all fuels be allowed up to 100% of the total heat input into the boiler. It is anticipated that NMU may blend these solid fuels as needed, to support the heat input

> required with the Renewable Resource fuel given preference whenever feasible. Natural gas is only intended to be used startup, shutdown and backup purposes.

Id.

DEQ issued a draft PSD permit on or about October 19, 2007. Resp. to Comments at 2 (attached as Exhibit 6). A public hearing was held on November 27, 2007. *Id.* The comment period closed on December 27, 2007. *Id.* DEQ issued its response to comments and final permit[1] on May 12, 2008. *Id.* Notice of that decision was mailed. Ex. 3. The notice provides that review to the Board may be requested on or before June 16, 2008. *Id.* This petition for review is filed within the time provided by 40 C.F.R. § 124.19(a).

SUMMARY OF PREVENTION OF SIGNIFICANT DETERIORATION REQUIREMENTS

The Clean Air Act's Prevention of Significant Deterioration (PSD) program applies to the construction or modification of any major emitting facility located in an area that is either in compliance with national ambient air quality standards (NAAQS) or that has not been designated as not attaining the NAAQS. 42 U.S.C. §§ 7407(d), 7475, 7479. Among the prerequisites for construction or modification of a major source are: (i) a PSD permit that includes all applicable PSD limits; (ii) a review by the permitting agency pursuant to all applicable regulations and an opportunity for public comment; (iii) a demonstration by the applicant that the source will not cause or contribute to air pollution in excess of NAAQS or "maximum allowable increase... for any pollutant... more than one time per

[1] Petitioner refers to the "final permit" as the permit issued on or about May 12, 2008 by the DEQ. However, the permit is not effective, pursuant to 40 C.F.R. § 124.15(b)(2), because review is requested and the Regional Administrator has not issued the final permit decision.

year" (increment); (iv) the source is subject to best available control technology (BACT) emission limits; and (v) notification to the Federal Lands Manager for any Class I airshed that may be affected and all Class I protections and procedures are met. 42 U.S.C. §§ 7475(a), (d).

Establishing an appropriate BACT limit for each pollutant subject to regulation is a critical component of the PSD program. *In re ConocoPhillips Co.*, PSD Appeal No. 07-02, Slip Op. at 4 (June 2, 2008). "BACT is a pollutant emission limitation that is based on what is achievable using the most effective pollutant control option available, after taking into account energy, environmental, and economic impacts and other costs." *Id.* at 5.

The Environmental Protection Agency (EPA) typically follows the 1990 draft guidance document, New Source Review Workshop Manual (Draft October 1990) (NSR Manual), when issuing PSD permits. *Id.* at 6. The NSR Manual provides a five-step process for establishing BACT limits:

(1) identify all available control options for the pollutant;

(2) analyze the control options' technical feasibility (exclude non-feasible options);

(3) rank the feasible options in order of effectiveness;

(4) evaluate the environmental, energy, and economic impacts of the ranked, feasible control options; and

(5) select the highest-ranked control option that does not result in site-specific, sufficiently-adverse environmental, energy or economic impacts.

NSR Manual at B.5-B.9; *ConocoPhillips*, Slip Op. at 6; *In re Knauf Fiber Glass*, 8 E.A.D. 121, 129-31 (EAB 1999). While the top-down process is not expressly required by applicable regulations, a "careful and detailed analysis of the criteria identified in the regulatory definition of BACT is required." *In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005). Therefore, if an applicant or permitting agency does not follow the NSR Manual's top-down approach, the resulting BACT limits are suspect and "scrutinize[d]... carefully to ensure that all regulatory criteria were considered and applied appropriately." *Knauf*, 8 E.A.D. at 129-130, n.14.

There are also important procedural requirements for the issuance of a PSD permit. As noted above, the public has a right to comment on "the air quality impact of [the] source, alternatives [to the source], control technology requirements, and other appropriate considerations." 42 U.S.C. § 7475(a)(2). The permitting agency must respond to comments "[a]t the time that any final permit decision is issued," and must "[b]riefly describe and respond to all significant comments on the draft permit or the permit application... raised during the public comment period, or during any hearing." 40 C.F.R. § 124.17(a). These procedural requirements are critical, as they "serve an important function related to the efficiency and integrity of the overall administrative scheme." *ConocoPhillips*, Slip Op. at 12. The response to comments is an essential part of the administrative record, must include the agency's rationale for its decision, and is reviewed by the Board to ensure that sufficient "considered judgment" was exercised in support of the permit decision. *Id.* at 24.

ARGUMENT

I. THE PERMIT DOES NOT INCLUDE SUFFICIENT BACT LIMITS

A. The DEQ Failed To Conduct A BACT Analysis for PM2.5.

The controlling law requires a BACT limit "for each pollutant subject to regulation under the Act that it would have the potential to emit in significant amounts." 40 C.F.R. § 52.21(j)(2). PM2.5 is "a pollutant subject to regulation under the Act" because EPA established a NAAQS for PM2.5 in 1997. 62 Fed. Reg. 38,652, 38,711 (July 18, 1997); 40 C.F.R. § 50.7.

PM2.5 will be emitted from the new and modified emission sources at the NMU plant in a "significant" amount because it will be emitted at "any emission rate." 40 C.F.R. § 52.21(b)(23)(ii); *see also* Ex. 4, Application at 15 (noting that emissions of $PM_{2.5}$ will be subject to BACT). Therefore, a PM2.5 BACT limit should be required. 70 Fed. Reg. 66,042 ("[t]he requirements applicable to NSR SIPs for and the obligation to subject sources to NSR permitting for $PM_{2.5}$ direct emissions are codified in the existing federal regulations and can be implemented without specific regulatory changes."). Petitioner preserved this issue for review by raising it in comments. Ex. 2, Comments of Sierra Club at sec. II.A., pp. 6-8. However, the DEQ responded to Petitioner's comments by stating that there was no requirement to include a BACT limit for $PM_{2.5}$ and that substitution of a PM_{10} BACT limit was sufficient. Ex. 6, Resp. to Comments at 18. This is wrong as a matter of law and reviewable pursuant to 40 C.F.R. § 124.19(a)(1).

On May 16, 2008 – after Sierra Club's comments on the NMU permit but before the final permit was issued by DEQ – EPA promulgated regulations to implement the PSD program for PM2.5. 73 Fed. Reg. 28,321 (May 16, 2008). Those regulations established a "significant increase" value of 10 tons per year (or 40 tons of SO_2 or NOx, which are precursors of $PM_{2.5}$). *Id.* at 28,349 (to be codified at 40 C.F.R. § 52.21(b)(23)(i)). Those regulations also purport to substitute PM_{10} for $PM_{2.5}$ for permit applications submitted prior to July 15, 2008. 73 Fed. Reg. at 28,349. However, such regulations do not control the permit for NMU at issue in this case.

First, by their own terms, the regulations are not effective until July 15, 2008. *Id.* at 28,322. For permits issued prior to July 15, 2008, including the NMU permit at issue here, the version of 40 C.F.R. § 52.21 in effect prior to May 16, 2008, applies and requires BACT limits for $PM_{2.5}$. 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j). In other words, there is no provision nor legal basis in the regulations applicable at the time that this Permit was issued for substituting PM_{10} BACT for $PM_{2.5}$ BACT.

Second, the provision in the May 16, 2008 rulemaking that purports to waive the requirement to implement $PM_{2.5}$ BACT by substituting PM_{10} BACT is unlawful. It is expected that this provision will soon be challenged in the United States Court of Appeals for the District of Columbia. Among the reasons that the rule is invalid and will be vacated are: (1) the EPA has no authority to waive applicable requirements of the Clean Air Act, which the "transition" provision substituting PM_{10} for $PM_{2.5}$ does for plants with applications pre-dating July 15, 2008; and (2) that the Federal Register notice, itself, states

that the basis for the very October 23, 1997, guidance memo incorporated into the regulation ("practical difficulties" in measuring $PM_{2.5}$) has been resolved, so there is no basis for the attempted waiver by EPA. 73 Fed. Reg. at 28,340; *see also* 72 Fed. Reg. 54,112 (Sept 12, 2007); 70 Fed. Reg. at 66,043 (recognizing that the "practical difficulties" identified in the Seitz memo "have been resolved in most respects.").

Further, substituting PM_{10} for $PM_{2.5}$ is arbitrary. PM_{10} is simply not the same as $PM_{2.5}$. They have different health impacts and $PM_{2.5}$ is more dangerous at lower concentrations. *In re So. Montana Elec. Generation and Transmission Coop., Highwood Generating Station*, Case No. BER 2007-07 AQ, Slip Op. at 26 (Mont.Bd.Envtl.Rev. May 30, 2008) ("*Highwood*"), available at http://www.deq.mt.gov/ber/2008Agendas/SME/Order.pdf. According to EPA, decreasing PM2.5 in the ambient air by only 0.5 ug/m^3 can prevent as many as 25-50 premature deaths each year." 70 Fed. Reg. at 66,006. Indeed, the entire premise for EPA promulgating $PM_{2.5}$ standards was a determination that the existing PM_{10} standards were not sufficient to protect health. 62 Fed. Reg. 38,652, 38,655-58, 38,665-67 (July 18, 1997). DEQ and EPA cannot pretend, for expediency in permitting, that these pollutants are the same.

There are significant additional differences between $PM_{2.5}$ and PM_{10} that make substitution of PM_{10} limits for $PM_{2.5}$ limits arbitrary. Condensable fraction PM comprises a much larger fraction of $PM_{2.5}$ than of larger PM. 73 Fed. Reg. at 28,334. Additionally, controls for PM_{10} are not necessarily controls for $PM_{2.5}$ and, more importantly for BACT

determinations, top-ranked controls for PM_{10} are not necessarily top-ranked controls for $PM_{2.5}$. *Highwood* at 9, 25 ("[t]he Seitz memo's guidance to rely on BACT analysis for PM10 does not ensure maximum achievable reductions in emissions of PM2.5."), 30 (finding that the vendor instructed applicant that it could deal with PM2.5 BACT limits by installing more efficient bags, but that the applicant should avoid tipping off the state agency "to avoid any tighter restrictions being placed upon us."). Additionally, as Sierra Club noted in its comments, common control technologies, such as the fabric filters proposed for the new NMU plant boiler, are highly effective at controlling PM and PM_{10}, but less effective at capturing finer-grain $PM_{2.5}$; $PM_{2.5}$ emissions are more aggressively controlled by controlling the pollutant's precursors. Ex. 2, Comments of Sierra Club at 8.

Because $PM_{2.5}$ is a pollutant subject to regulation and which will be emitted at a significant amount, a top-down BACT analysis is required. There is no dispute that DEQ included a $PM_{2.5}$ limit in the Permit, but that the limit corresponds to the PM_{10} limit and is not the result of an independent, top-down (or equivalent) BACT determination for $PM_{2.5}$. DEQ's failure to include a sufficient $PM_{2.5}$ BACT limit is a clearly erroneous conclusion of law. The Board should remand.

B. The Draft Permit Lacks BACT Limits For CO_2 and N_2O.

The Permit lacks required BACT limits on CO_2 and N_2O. Petitioner preserved this issue by raising it in comments. Ex. 2, Comments of Sierra Club at sec. II.B., pp. 8-12. In response to Petitioner's comments regarding this requirement, DEQ asserts that no such limits are required by law.

AQD Response
The MDEQ is required to review and consider the applications for permits in accordance with applicable existing state and federal law. There is no applicable emission standard of performance under the Clean Air Act for carbon dioxide or nitrous oxide emissions from electric generating units. Similarly, there are no state rules requiring limits on carbon dioxide or nitrous oxide emissions from electric generating units. The DEQ cannot suspend the processing of permits until such standards are promulgated.

Ex. 6, Resp. to Comments at 18-19. DEQ is wrong as a matter of law.

The Clean Air Act prohibits the construction of a new source except in accordance with a prevention of significant deterioration (PSD) construction permit. 42 U.S.C. § 7475(a); 40 C.F.R. §52.21(a)(2)(iii). One of the requirements, contained in § 165(a)(4) of the Act, is that every PSD permit must include a BACT emission limit "for each pollutant subject to regulation under this chapter emitted from, or which results from" the facility. 42 U.S.C. § 7475(a)(4); *see also* 40 C.F.R. § 52.21(b)(50)(iv) (requiring BACT for "any pollutant that otherwise is subject to regulation under the Act"). Therefore BACT applies to pollutants "subject to regulation," not merely pollutants for which there is an "applicable emission standard of performance," as DEQ asserts. CO_2 and N_2O are subject to regulation under the Act. Moreover, as pollutants covered by 40 C.F.R. § 52.21(b)(23)(ii), the addition of the NMU plant here will result in a "significant increase" because it will result in "any" increase. *See* Environmental Protection Agency, AP 42, Fifth Edition, *Compilation of Air Pollution Emission Factors*, Volume I, Chapter 1: External Combustion Sources, Tables 1.1-19 (N_20 for circulating fluidized bed), 1.1-20 (CO_2 by type of coal), available at http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s01.pdf; *see also* 73 Fed. Reg. at 28,333 (recognizing that a pollutant subject to regulation, for which no

other significant emission rate value is set, are subject to an "any emissions rate" trigger). That the addition of a 205 MMBtu/hour boiler will result in an increase in CO_2 and N_2O emissions in not in dispute. The only dispute by DEQ is whether a BACT limit is required as a matter of law.

Carbon Dioxide (CO_2) has been *regulated* under the Clean Air Act since 1993. And, on April 2, 2007, the Supreme Court held that carbon dioxide and other greenhouse gases are "pollutants" under the Clean Air Act—clarifying that they are, indeed, "*subject to* regulation." *Massachusetts v. EPA*, 127 S.Ct. 1438, 1460-62 (2007); *see also* 42 U.S.C. § 7651k, note; 40 C.F.R. § 75.1, *et seq.* Therefore, DEQ's position is a clearly erroneous conclusion of law and should be remanded.

1. CO2 Is Currently Regulated.

Section 821(a) of the Act provides:

> Monitoring. - The Administrator of the Environmental Protection Agency *shall promulgate regulations* within 18 months after the enactment of the Clean Air Act Amendments of 1990 *to require that all affected sources subject to the Title V of the Clean Air Act shall also monitor carbon dioxide emissions* according to the same timetable as in Sections 511(b) and (c). *The regulations shall require that such data shall be reported to the Administrator.* The provisions of Section 511(e) of Title V of the Clean Air Act shall apply for purposes of this section in the same manner and to the same extent as such provision applies to the monitoring and data referred to in Section 511.

42 U.S.C. § 7651k note; Pub.L. 101-549; 104 Stat. 2399 (emphasis added). In short, Congress specifically ordered EPA "to promulgate regulations" requiring that facilities

covered by Title IV of the Act monitor and report their CO_2 emissions in § 821.[2] The most basic canon of statutory interpretation provides that words, like "subject to regulation" should be given their plain meaning, which is controlling over other agency interpretations. *Lamie v. United States Tr.*, 540 U.S. 526, 534 (2004); *Chevron v. NRDC*, 467 U.S. 837, 842-843 (1984). The Supreme Court has already pointed out that information gathering, record keeping, and data publication rules are indisputably within the conventional understanding of "regulation." *Buckley v. Valeo*, 424 U.S. 1, 66-68 (1976) (record keeping and reporting requirements are regulation of political speech).

Furthermore, the structure of the Act reaffirms that Congress intended BACT to apply to the broadest category of pollutants. Congress expressly required a BACT limit for "any pollutant subject to regulation" under the Act. 42 U.S.C. § 7475(a)(4). "Regulation," within Section 165(a)(4), is presumed to mean the same thing as "regulation" in Section 821, where Congress specifically required EPA to issue regulations for monitoring and reporting CO_2 emissions. *Commissioner of Internal Rev. v. Lundy*, 516 U.S. 235, 249-50 (1996) (holding that where Congress uses the same word in two sections of the same act, it is presumed to mean the same thing both times). In contrast, where Congress intended to mean a limit on the quantity, rate, or concentration of emissions,

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[2] EPA's § 821 regulations, which were finalized on January 11, 1993, require CO_2 emissions monitoring (40 CFR §§ 75.1(b), 75.10(a)(3)); preparing and maintaining monitoring plans (40 CFR § 75.33); maintaining records (40 CFR § 75.57); and reporting such information to EPA, (40 CFR §§ 75.60 - 64). 40 CFR § 75.5 prohibits operation in violation of these requirements and provides that a violation of any Part 75 requirement is a violation of the Act. These requirements, including the requirement to monitor CO2, are also included in various state implementation plans. *See* Wis. Admin. Code § NR 438.03(1)(a) (requiring reporting of pollutants listed in Table I, including CO2), adopted under the Act at 40 C.F.R. § 52.2570(c)(70)(i); Wis. Admin. Code § NR 439.095(1)(f) (Phase I and phase II acid rain units... shall be monitored for... carbon dioxide..."), adopted under the Act at 40 C.F.R. § 52.2570(c)(73)(i)(I).

Congress knew how to do so and did so explicitly, rather than using "subject to regulation." 42 U.S.C. § 7602(k) (defining "emission limitation" and "emission standard")[3]; *Alabama Power Co. v. Costle*, 636 F.2d 323, 403-06 (D.C. Cir. 1979) (holding that EPA applies BACT to any pollutant "subject to regulation," which is broader than the pollutants for which ambient air quality standards are set and broader than the category covered by an "applicable emission standard or standard of performance under the Act"); *see also e.g.*, 73 Fed. Reg. at 28,333 (recognizing that ammonia is subject to regulation). Moreover, there is nothing in Section 165, unlike Sections 108, 111 and 202, that requires EPA to make a finding that a pollutant endangers public health or welfare before a BACT limit is required. *Compare* 42 U.S.C. § 7408(a)(1)(A) (requiring EPA to find that a pollutant "may reasonably be anticipated to endanger public health or welfare"), § 7411(b)(1)(A) (requiring a finding that the source is "anticipated to endanger public health or welfare"), *and* § 7521(a)(1) (requiring EPA to determine that a pollutant "may reasonably be anticipated to endanger public health or welfare") *with* 42 U.S.C. § 7475(a)(4) (requiring BACT for "each pollutant subject to regulation" and not requiring a finding of endangerment to health or welfare). In short, BACT is required even for "pollutants determined not to present substantial public health or welfare concerns." *Alabama Power Co. v. Costle*, 636 F.2d at 370 n.134.

Furthermore, EPA has consistently interpreted Section 821 of the Act to constitute regulation under the Clean Air Act by promulgating regulations requiring monitoring

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[3] Where Congress meant "emission limit" or "emission standard," it used those terms rather than "subject to regulation." *E.g.*, 42 U.S.C. §§ 7412(f)(5), 7521(f)(5), 7617(a)(7), 7651d(a)(1).

and reporting of CO_2 emissions that are enforceable pursuant to Clean Air Act sections 113 and 304, 42 U.S.C. §§ 7413 and 7604. 42 U.S.C. §§ 7651k, note (requiring EPA to promulgate rules), 7651k(e) ("It shall be unlawful for the owner or operator of any source subject to this subchapter to operate a source without complying with the requirements of this section, and any regulations implementing this section."); 40 C.F.R. §§ 75.1(a) ("The purpose of this part is to establish requirements for the monitoring, recordkeeping, and reporting of... carbon dioxide (CO2) emissions... pursuant to Sections 412 and 821 of the CAA, 42 U.S.C.7401-7671q, as amended by Public Law 101-549 (November 15, 1990)."), 75.5(a) (providing that a violation of the monitoring and reporting requirements in part 75 are violations of "the Act."); 56 Fed. Reg. 63,002, 63,291 (Dec. 3, 1991) (providing that the requirements in part 75 are "pursuant to 821 of the Act"); 60 Fed. Reg. 26,510 (May17, 1995) (referring to the monitoring requirements in part 75 as "authorized under Sections 412 and 821 of the Act"); 59 Fed. Reg. 42,509 (Aug. 18, l994). In addition to the regulations requiring monitoring and reporting of CO_2 in 40 C.F.R. pt. 75, CO_2 is also regulated in EPA-adopted State Implementation Plans and in the landfill emission regulations promulgated under section 111 of the Clean Air Act. Wis. Admin. Code §§ NR 438.03(1)(a) (requiring reporting of pollutants listed in Table 1, including CO_2), adopted under the Act at 40 C.F.R § 52.2570(c)(70)(i), NR 439.095(1)(f) (Phase I and phase II acid rain units "shall be monitored for... carbon dioxide... "), adopted under the Act at 40 C.F.R. §§ 52.2570 (c)(73)(i)(l); 40 C.F.R. §§ 60.33c (requiring control of "MSW landfill emissions), 60.751 (defining "landfill emissions"); 63 Fed. Reg. 2154-01 (Jan. 14, 1998) (approving state

plan for implementing landfill gas guidelines); Office of Air Quality Planning & Standards, U.S. EPA, Publ'n No. EPA-453/R-94-021, *Air Emissions from Municipal Solid Waste Landfills – Background Information for Final Standards and Guidelines* (December 1995) (identifying landfill emissions as including methane and CO_2).

Therefore, the plain language and structure of the Act, regulations adopted under the Act, as well as EPA's prior interpretations, confirm that the monitoring and reporting requirements applicable to CO_2 emissions constitute "regulation" within the meaning of Section 165. DEQ's failure to include a BACT limit for CO_2 is clearly erroneous and the permit should be remanded.

2. N_2O is Currently Regulated.

As noted above for CO_2, pollutants regulated by approved state implementation plans are regulated under the Clean Air Act. While the serious threats posed by CO_2 emissions, due to its contribution to the damage occurring to the climate and storm patterns, it is also important that nitrous oxide (N_2O) emissions be controlled as they are 296 times as potent as CO_2 in their contribution to the climate crisis. *See* Climate Change 2001: Working Group I: The Scientific Basis, available at http://www.grida.no/climate/ipcc_tar/wg1/248.htm.

N_2O is regulated in at least one State Implementation Plan approved by EPA, and therefore, is not only subject to, but is *regulated* under the Act. *See* Wis. Stat. §§ 285.60 (requiring air permits for all sources not otherwise exempted), 285.62(1); Wis. Admin. Code § NR 407.05, Table 3 (requiring permit application to

include Nitrous Oxides if greater than 2,000 lbs/year). Moreover, nitrous oxide is also regulated under Wis. Admin. Code § NR 438.03(1)(a) and Table 1, adopted under the Act at 40 C.F.R. § 52.2570(c)(70)(i). Therefore, a BACT limit is also required for N_2O.

II. THE BACT DETERMINATIONS FOR THE BOILER DID NOT INCLUDE A SUFFICIENT ANALYSIS OF CLEANER PRODUCTION PROCESSES AND FUELS.

A BACT analysis for a coal fired power plant must include consideration of cleaner production processes and innovative fuel combustion techniques. 42 U.S.C. § 7479(3) (BACT "means an emission limit based on the maximum degree of reduction of each pollutant... through application of... *clean fuels*..." (emphasis added)); 40 C.F.R. § 52.21(b)(12).

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

In re Inter-Power of New York, 5 E.A.D. 130, 134 (EAB 1994)(emphasis added, internal citations omitted); *Knauf*, 8 E.A.D. at 136; *In re Old Dominion Electric Cooperative*, 3 E.A.D. 779, 794 n.39 (EAB 1992) ("BACT analysis should include consideration of cleaner forms of the fuel proposed by the source."); *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 842-43, PSD Appeal No. 87-3, Slip Op. 8-10 (EAB 1989)(remanding a permit because the permitting agency failed to consider burning natural gas as a viable pollution control strategy).

Petitioner preserved the issue of clean fuels, both with respect to biomass (wood) and lower-sulfur coal, in its comments. Ex. 2, Comments of Sierra Club at secs. II.C. and II.E, pp. 12-20. DEQ does not explicitly disagree with the requirement to establish BACT based on clean fuels. Instead, however, it asserts that an applicant's preferred fuel—or worst case fuel within the category of fuels the applicant intends to use—must be assumed when establishing the BACT limit. This is wrong as a matter of law.

NMU's application concedes that the circulating fluidized bed boiler it intends to build can burn a variety of fuels and that NMU intends to burn biomass as the primary fuel. Ex. 4, Application at 1 (boiler will have the capacity to burn 100% wood); Letter from Jeffrey Jaros, NTH, to David Riddle, MDEQ, Re: Addendum to Application No. 60-07 to Update SO2 Emission Limit; Northern Michigan University- Ripley Heating Plant (September 18, 2007) ("The primary fuel for this boiler will be virgin wood waste.") (attached as Exhibit 7). Indeed, the one purported benefit of CFB boilers, as a category, is the ability to burn many gaseous fuels, almost any solid fuel, and to "allow operation on Renewable Resources (specifically wood chips) up to 100% of the total heat input..." *E.g.*, Letter from Michael Hellman, NMU, to Mary Ann Dolehanty, MDEQ, Re: Permit to Install Application for a New Circulating Fluidized Bed Boiler; Northern Michigan University-Ripley Heating Plant (February 5, 2007) (see Exhibit 4).

The use of coal will generate significantly more SO_2 and carbon dioxide emissions than wood. Unlike wood and other forms of biomass, coal also contains a long laundry list of hazardous metals, including arsenic, mercury and nickel. *Compare* AP-42 Emission

Factor § 1.1 (emissions from coal combustion) *with* § 1.6 (emissions from wood). It is undisputed that SO_2 emissions will be much lower when burning wood at the proposed boiler, compared with burning coal. Emissions of SO_2 will be 0.025 lbs/MMBtu, maximum, when burning wood. Letter from J. Jaros - NTH Consultants, Ltd. to D. Riddle - MDEQ (Ex. 7); *see also* Environmental Protection Agency, RACT/BACT/LAER Clearinghouse, ID # NC-0092 (woodwaste fired boiler with 0.024 lb SO2/MMBtu BACT limit) (available at http://cfpub.epa.gov/rblc/htm/bl02.cfm). In comparison, the Permit limits SO2 emissions to 0.20 lb/MMBtu and 0.15 lb/MMBtu for 24-hour and 30-day averaging periods, respectively. Ex. 1, Permit p. 6. Because the use of waste wood would result in the lowest emission rates of SO_2, the use of 100% waste wood as fuel is the "top" pollution control option. This top control option is not infeasible, *NSR Manual* at B.7, nor are energy, environmental or economic impacts sufficient to justify rejecting it from the top-down BACT analysis. *NSR Manual* at B.8-B.9. DEQ's failure to establish an SO_2 limit based on clean-fuel wood, rather than coal, is clear error and the Board should remand the permit for an appropriate wood-fuel-based BACT limit.

Additionally, the boiler can burn low-sulfur Powder River Basin (PRB) coal. Ex. 4, Application at 3; Ex. 5, SOB at 2. However, the Permit's BACT limits assume a higher-sulfur (1.5% or 2 lb SO_2/MMBtu) coal. Ex. 5, SOB at 4; Ex. 7, Addendum to Application at 1 (September 18, 2007). NMU did not demonstrate that the price of using cleaner, lower-sulfur, coal is not "cost effective." *NSR Manual* at B.31; *Hibbing Taconite*, Slip Op. at 8 n.11. Therefore, it was improper to establish a BACT limit on 2 lb SO2/MMBtu coal, when

cleaner coal is an available control option. *In re East Kentucky Power Cooperative, Inc., Hugh L. Spurlock Generating Station*, Title V Petition No. V-06-007, Order Responding to Petitioner's Request that the Administrator Object at 30 (Adm'r Aug. 30, 2007) (finding that the state permitting agency failed to justify an SO2 BACT limit and "needs to provide additional analysis and/or a justification for its determination that use of lower sulfur coal was not can achievable option for Spurlock Unit 4.") (available at http://www.epa.gov/region07/programs/artd/air/title5/petitiondb/petitions/east_kentucky_spurlock_response2006.pdf).

> [An] applicant should demonstrate to the satisfaction of the permitting agency that costs of pollutant removal for the control alternative are disproportionately high when compared to the cost of control for that particular pollutant and source in recent BACT determinations.

NSR Manual at B.32. Mere generalized concerns about increased costs, fuel availability, or economics is not enough to justify rejecting a method of reducing emissions. Most pollution controls will cost money; but, Congress did not permit pollution sources to escape pollution control merely because it might cost money. "BACT is required by law. Its costs are integral to the overall cost of doing business and are not to be considered an afterthought." *Id.* at B.31 ("In the economical impacts analysis, primary consideration should be given to quantifying the cost of control and not the economic situation of the individual source."); *see also Alaska Dep't of Environmental Conservation v. EPA*, 124 S.Ct. 983, 1005 (2004) (upholding EPA's order rejecting a BACT analysis that eliminated a pollution control option on claims of economic infeasibility without an adequate record);

Hibbing Taconite, Slip Op. at 8 ("Mere generalizations about the economic woes of the steel industry are not enough."). Here, there was no demonstration by the applicant nor the agency that would justify ignoring the lower emissions achievable with cleaner fuel.

A. DEQ's Basis For Rejecting Clean Biomass Fuel In Favor Of Worst-Case Coal Fuel Contravenes The Requirements of BACT and Congressional Policy.

The DEQ improperly rejected comments asserting that BACT limits must account for the pollution reduction achievable with cleaner forms of fuel that the NMU CFB boiler can burn. In response to comments, DEQ states:

> Northern Michigan University planned for fuel flexibility at the proposed solid fuel fired circulating fluidized bed boiler to assure continued operation during severe winter weather. At any time during the winter or into spring, heavy snows can severely limit the ability to travel. In the first week of April in both 2007 and 2008, snowfalls measured in feet of snow occurred, severely limiting travel. Similar conditions occur on a regular basis throughout the winter and weather events affecting the availability of fuel are a fact of life in the Upper Peninsula of Michigan. It is forseeable that fuel suppliers will not have access to the available wood supply or the means to transport wood fuel to the Ripley plant site for an extended period of time. The site is relatively small, with solid fuel storage capacity equivalent to about three days of operation. To keep the heat and power boiler operating, a fuel use plan that allows the use of a choice of available fuel is necessary, including coal from the nearby power plants. A different plan would redefine the source as proposed by Northern Michigan University. The BACT limits are correctly based on expected emissions from the use of coal as a fuel.

Ex. 6, Resp. to Comments at 19. There are three significant errors with this position of DEQ. First, that fact that an uncommon event is "foreseeable" cannot be the basis for rejecting a pollution control altogether and establishing long-term limits on the worst

possible fuel. If it were, BACT would be meaningless because there are unlimited "foreseeable" events that would impact the ability to use any control option, including pollution control devices. Second, the permit record contains no evidence that the NMU boiler cannot obtain a continuous supply of its "primary" biomass fuel. Put another way, it is pure speculation, rather than a fact supported by evidence, that the snowfall (in April 2007, April, 2008 or any other time) would prevent deliveries to the plant that could not be planned for. Third, even if it were likely or certain, as opposed to merely "foreseeable," that weather would prevent the delivery of wood fuel for a few days each year, that fact cannot justify a BACT limit that assumes the worst-possible-coal fuel for 22 days each month. Instead, the BACT limit should account for the infrequent, limited periods, where a substitute fuel is required, just as BACT limits can provide a separate limit for periods of startup and shutdown when the longer-term BACT limits might not be achievable.

1. **DEQ's Rejection of The Planned Clean Fuel to Establish BACT Undermines The BACT Requirement.**

The applicable law requires that BACT limits be established based on the maximum degree of pollution reduction achievable with a number of specified methods, one of which is the use of clean fuels. 42 U.S.C. § 7479(3) (BACT includes "available methods, systems, and techniques, *including clean fuels*, fuel cleaning or treatment or innovative fuel combination techniques for control of the air contaminant." (emphasis added)); 40 C.F.R. § 52.21(b)(12) (same). Congress specifically intended that BACT limits be established by considering the maximum pollution reduction through using cleaner fuel. *Inter-Power of New York*, 5 E.A.D. at 134 (emphasis added, internal citations omitted);

Knauf, 8 E.A.D. at 136; *Old Dominion*, 3 E.A.D. at 794, n.39 ("BACT analysis should include consideration of cleaner forms of the fuel proposed by the source."). The EPA has also historically required consideration of clean fuel in establishing BACT limits. *Id.* For example, in *Hibbing Taconite*, the Administrator held that BACT must be determined based on the continued use of clean natural gas, rather than petroleum coke-- a dirtier fuel. *Hibbing*, Slip. Op. at 9.

A BACT limit based on clean biomass fuel would not impermissibly "redefine" the source. It is not clear what DEQ means by its statement that BACT limits should be established based on clean-fuel wood would "would redefine the source as proposed by Northern Michigan University." Ex. 6, Resp. to Comments at 19. It is clear, however, that applicants, DEQ, and other permitting agencies are misapplying this Board's decisions related to "redefining the source." *See e.g., Sierra Club, et al. v. Envtl. and Public Protection Cabinet, et al.*, File No. DAQ-27602-042, Hr'g Off. Rept. And Recommended Order at 149-50 (Ky. Envt. And Pub. Prot. Cabinet) (describing an applicant's attempt to avoid consideration of a cleaner mix of coals as "redefining" the source) attached in relevant part as Exhibit 8). The Board should clarify that the statutory directive to establish BACT based on clean fuels cannot be negated by merely terming the applicant's preferred fuels to be part of the "design," and that any other fuel is a "redesign."

The "source" within the "redefining the source" decisions of this Board refers to the fundamental design, or "basic design," of the facility, not to the totality of the applicant's preferred design, facilities, and operation practices. *In re Prairie State*

Generating Station, 13 E.A.D. ___, PSD Appeal No. 05-05, Slip Op. at 27 (EAB Aug. 24, 2006) (citing *Knauf Fiber Glass*, 8 E.A.D. at 136; NSR Manual at B.13). This derives from the statutory language requiring that the "proposed facility" be subject to BACT. 42 U.S.C. § 7475(a)(4). In the context of the statute, the "proposed facility," refers to the "major emitting facility on which construction is commenced." 42 U.S.C. § 7475(a) ("No major emitting facility on which construction is commenced... may be constructed... unless... (4) the proposed facility is subject to the best available control technology..."). The Act defines the "major emitting facility" by facility type and, sometimes, by size. *See* 42 U.S.C. § 7479(1). Similarly, EPA defines the "major emitting facility" by Standard Industrial Code cateogory. 45 Fed. Reg. 52,676, 52,694 (Aug. 7, 1980). In other words, typically a BACT analysis must consider clean fuels so long as the fuel change does not constitute a change in the "major emitting facility" category.

With a few exceptions, prior decisions by EPA correspondingly require consideration of clean fuels when clean fuels would not redefine the source from one category of "major emitting facility" to another. In *Hibbing*, the Administrator rejected application of the "redefining" policy, holding:

> [O]ne argument that could be made is that the Region, by requiring the burning of natural gas to be an alternative to be considered in the BACT analysis, is seeking to "redefine the source." Traditionally, EPA has not required a PSD applicant to redefine the fundamental scope of its project. However, this argument has not been made, and in any event, the argument has no merit in this case.
>
> EPA regulations define major stationary sources by their product or purpose (e.g., "steel mill," "municipal incinerator," "taconite ore processing plant," etc.), not by

> fuel choice. Here, Hibbing will continue to manufacture the same product (i.e., taconite pellets) regardless of whether it burns natural gas or petroleum coke. Likewise, the PSD guidelines state that in choosing alternatives to be considered in a BACT analysis, the applicant must look to what types of pollution controls other facilities in the industry are using. The record here indicates that there are other taconite plants that burn natural gas, or a combination of natural gas and other fuels. Thus, it is reasonable for Hibbing to consider natural gas as an alternative in its BACT analysis. Moreover, because Hibbing is already equipped to burn natural gas, this alternative would not require a fundamental change to the facility.

Hibbing Taconite, Slip Op. at 9 (citing *In re Pennsauken County, New Jersey Resource Recovery Facility*, 2 E.A.D. 667, PSD Appeal No. 88-8, Slip Op. at 11 (Adm'r 1988); 40 C.F.R. § 52.21(b)(1)). The Administrator's decision in *Hibbing* highlights that, typically, the definition of the source corresponds to the source category defined in 40 C.F.R. § 52.21(b)(1), and not the specific operating scenario desired by the applicant. In contrast, in the *Pennsauken County* case the Administrator rejected a petitioner's argument that EPA must substitute existing area power plants for the applicant's intended waste combustor, which would have resulted in a different category of "major emitting facility."

> In Pennsauken, the petitioner was urging EPA to reject the proposes source (a municipal waste combustor) in favor of using existing power plants to co-fire a mixture of 20% refuse derived fuel and 80% coal. In other words, the petitioner was seeking to substitute power plants (having as a fundamental purpose the generation of electricity) for a municipal waste combustor (having as the fundamental purpose the disposal of municipal waste)... Here, the petitioner... is merely urging the continued burning of natural gas at the same source—an alternative that will not require any fundamental change to Hibbing's product, purpose or equipment.

Hibbing, Slip Op. at 9 n.12; *In re Pennsauken County, New Jersey Recovery Facility*, PSD Appeal No. 88-8, Slip. Op. at 10 (Adm'r November 10, 1988) ("Permit conditions are imposed for the purpose of ensuring that the proposed source of pollutant emissions -- here, a municipal waste combustor -- uses emission control systems that represent BACT..."); *see also In the Matter of: Brooklyn Navy Yard Resource Recovery Facility*, 3 E.A.D. 867 (EAB 1992) (finding that considering waste separation as BACT for a waste combustor *does not* redefine the source even where it could include "a separate collection program," changes to the applicant's planned "materials recovery facilities or centralized composting programs," and changes to the number and type of trucks and workers); *In re Genesee Power Station Ltd. Partnership*, 4 E.A.D. 832 (EAB 1993) (requiring consideration of "fuel cleaning" by undertaking a fuel stream processing to separate painted wood where the applicant's intended practice was to rely on a supplier to undertake processing).

One narrow exception occurred in *Prairie State*, in which the Board accepted Illinois' conclusion that the power plant in that case was intended and designed to burn a dedicated fuel supply, sufficient for the life of the plant, that is delivered directly from an adjacent mine. *Id.* at 31-32 ("utilization of this particular coal resource is the primary objective."); *see also Sierra Club v. E.P.A.*, 499 F.3d 653, 655 (7th Cir. 2007) ("to convert the design from that of a mine-mouth plant to one that burned coal obtained from a distance would require that the plant undergo significant modifications-concretely, the half-mile-long conveyor belt, and its interface with the mine and the plant, would be superfluous

and instead there would have to be a rail spur and facilities for unloading coal from rail cars and feeding it into the plant").

However, it is apparent from the *Prairie State* case, the "redefining" policy is narrow. In *Prairie State*, the state agency considered pollution control options that would have required fundamental changed in design from a traditional coal power plant to a gasification and combined cycle plant. *Prairie State*, Slip. Op. at 36. As the Board noted, the fact that the state agency looked beyond the applicant's preferences to other types of power plants indicates that the "redefining the source" policy is not so narrow as to cut off consideration of pollution control options that would necessitate significant changes from the applicant's preferred strategy. *Id.* The *Prairie State* case was therefore a narrow exception, based on the state agency's specific finding that the plant in that case was a specific type: a mine-mouth plant intended to burn a specified coal deposit. *See* Brief of EPA, *In re Prairie State Generating Station*, PSD Appeal No. 05-05 at 7 ("Prairie State applied for a permit to construct a single source that combines a coal mine and a coal-fired-steam-electric-generating facility... Under these circumstances, requiring Prairie State to fire low-sulfur coal would fundamentally redefine the proposed project. Instead of constructing a mine on this site to supply coal, Prairie State would have to obtain low-sulfur coal from another site and transport this coal to the facility, significantly altering the design, scope, and purpose of the project."). The Seventh Circuit specifically warned that the *Prairie State* decision should not be read as broadly allowing the "redefining"

policy to trump the "clean fuels" provision in the Act, merely because some changes may be necessary to the plant in order to burn cleaner fuel.

> Suppose this were not to be a mine-mouth plant but Prairie State had a contract to buy high-sulfur coal from a remote mine yet could burn low-sulfur coal as the fuel source instead. *Some adjustment in the design of the plant would be necessary in order to change the fuel source from high-sulfur to low-sulfur coal... but if it were no more than would be necessary whenever a plant switched from a dirtier to a cleaner fuel the change would be the adoption of a "control technology." Otherwise "clean fuels" would be read out of the definition of such technology.*
>
> [Some passages in the Board's *Prairie State* decision] might be read as merging two separate issues: the difference between low-sulfur (clean) and high-sulfur (dirty) coal as a fuel source for a power plant, and the difference between a plant co-located with a coal mine and a plant that obtains its coal from afar. The former is a difference in control technology, the latter a difference in design (or so the EPA can conclude). We think it is sufficiently clear... that the Board did not confuse the two issues; that it granted the permit not because it thinks that *burning* low-sulfur coal would require the redesign of Prairie State's plant (it would not), but because *receiving* coal from a distant mine would require Prairie State to reconfigure the plant as one that is not co-located with a mine, and this reconfiguration would constitute a redesign.

Sierra Club, 499 F.3d at 656 (emphasis added in first paragraph, original in second paragraph). In other words, plant design changes necessary to burn cleaner fuel, as well as changes to the applicant's preferences or expectations must be considered so that Congress' command to based BACT limits on clean fuels is given effect.

In this case, DEQ's decision to establish BACT limits on cleaner fuel than 2 lb SO_2/MMBtu coal is not a change that would redefine the plant. In fact, here, the plant intends to burn the cleaner wood fuel, but merely prefers a less stringent BACT limit based on coal. DEQ's attempt to nullify the clean fuels requirement of BACT by asserting

that it would "redefine" the source is a clear error of law and should be remanded. *E.g.*, *Knauf*, 8 E.A.D. at 140 (holding that an applicant cannot "circumvent the purpose of BACT, which is to promote the use of the best control technologies as widely as possible" by limiting review to the proprietary plant process and design that the applicant wished to construct). Perhaps more importantly, the Board's decision in this case can help clarify the instances where resort to the old-saw "redefining the source" is unjustified. *See* 40 C.F.R. § 124.17(a)(2) (providing for review of decisions where an important policy consideration is implicated). DEQ's refusal to consider clean fuel based on an assertion of "redefining the source" is clearly erroneous and should be remanded.

2. The Record Lacks Any Evidence To Support DEQ's Conclusion.

The permit record does not contain evidence to support DEQ's conclusion that weather conditions will prevent delivery of biomass fuel for a period of time sufficient for NMU to deplete its store of biomass—while still permitting coal-deliveries. Such events would require a number of events (too much snow for biomass trucks, not too much snow for coal trucks, and low quantities of fuel in storage). In fact, some of DEQ's statements in the record indicate that weather would prevent *either* coal or wood delivery. Ex. 5, SOB at 2 ("Heavy snowfalls occur on a regular basis in the Upper Peninsula of Michigan, and the short term availability of *any* of the fuel supplies *could* be interrupted" (emphasis added)).

Other than DEQ's assertions that there were significant snowfalls in April 2007 and April 2008, and that "heavy snowfalls" occur and "could" interrupt delivery of "any of the fuel supplies," Ex. 5, SOB at 2, there is no evidence in the permit record to support

DEQ's conclusion that biomass cannot be the basis for BACT limit.[4] Snowfalls, even occurring regularly, is not evidence that clean fuel is unavailable while coal is. *E.g., In re General Motors, Inc.*, 10 E.A.B. 360 (EAB 2002) (holding that the Michigan DEQ cannot make a BACT determination based on scarcity of fuel without evidence in the record). The Board has long held that permit issuing agencies must adequately document their decision making process. *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 191, n.31 (EAB 2000). This includes, at a minimum, that the agency "articulate with reasonable clarity the reasons for the conclusions and the significance of the crucial facts in reaching those conclusions." *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417 (EAB 1997). Here there is a paucity of evidence to support DEQ's apparent conclusion that the mere possibility of snowy weather could prevent use of clean fuel for long periods of time (including during summer months).

If the limited fuel storage capacity at NMU is a limiting factor, DEQ should have addressed the possibility of adding biomass storage. The need to install more biomass storage capacity to provide adequate fuel during winter weather-based shortages is a physical modification that "do[es] not in and of [it]self provide a justification for eliminating the control technique on the basis of technological infeasibility." *NSR Manual* at B.20. Nor is a physical change to add sufficient storage to allow an uninterrupted biomass fuel stream a "redesign" of the source. *Sierra Club*, 499 F.3d at 656 (holding that

[4] Petitioner requested a complete copy of the entire permit record DEQ relied upon under Michigan open records law. DEQ has yet to provide those documents. Based on the documents that were in the record prior to the close of the public comment period, there is no evidence to support DEQ's assertion.

physical changes needed to allow burning clean fuel must be included in a BACT analysis).

B. Even If NMU Cannot Meet A Biomass-Based BACT Limit During Infrequent Weather Events, BACT Limits Should Not Assume Worst-Case Fuel For All Periods of Operation.

Assuming, *arguendo*, that there are infrequent winter weather events that block deliveries of biomass fuel, but not coal fuel[5], to the NMU plant, the BACT limit can account for those events without defaulting to the worst-case fuel. Notably, NMU has not demonstrated that biomass fuel is not technologically feasible. *NSR Manual* at B.7. Instead, it plans to burn biomass as the primary fuel. Ex. 6, Resp. to Comments at 19 ("Northern Michigan University applied for a permit to burn wood, a renewable resource, with coal as an alternative fuel.") A temporary, infrequent, largely-theoretical possibility that weather will prevent deliveries of biomass for a long-enough period that existing supplies will be depleted does not fit the typical meaning of infeasibility. "Generally, such a demonstration would involve an evaluation of the pollutant-bearing gas stream characteristics and the capabilities of the technology [and]... unresolvable technological difficulties...." *NSR Manual* at B.19.

The 30-day SO_2 BACT limit established by DEQ assumes burning coal for 22 out of 30 days, and wood for only seven days. Ex. 5, SOB at 4. This limit even applies during summer months, where there is no claim of snowfall affecting fuel supplies. If short-term conditions required burning coal during short periods in winter months, and a higher

[5] Inherent in DEQ's theory is its apparent assumption that deliveries of coal, which is delivered by truck in the same manner as biomass, will be able to traverse the roads that biomass trucks cannot. The Statement of Basis suggests that both fuels *could* be cut off by weather. Ex. 5, SOB at 2.

short-term SO_2 limit based on coal is necessary, it would ignore the "clean fuels" requirement to establish long-term BACT limits assuming that the temporary coal fuel is burned during most periods. Instead, DEQ should determine the likely number of days that NMU will be required to burn coal due to weather (if any), during which months, and account for those periods when calculating 30-day and annual limits. *See e.g.*, Ltr. From JoAnn Heiman, Chief of Air Permitting, EPA Region 7, to Clark Duffy, Kansas Department of Health & Environment, Attachment A (Nov. 9, 2006) (noting that when use of higher-sulfur fuel is necessary during short term periods, it is not proper to establish long-term BACT limits assuming such dirtier fuel) (attached as Exhibit C to Comments of Sierra Club and as Exhibit 9 hereto).

The Board has previously required that when infrequent events could prevent temporary exceedance of an otherwise-appropriate BACT limit, the permitting agency should "carefully circumscribe in the permit the conditions under which [the permittee] would be authorized to exceed the[ ] otherwise applicable emission limits and establish... that such conditions are nonetheless in compliance with applicable requirements." *In re Tallmadge Generating Station*, PSD Appeal No. 02-12, at 28 (EAB, May 21, 2003) (addressing startup and shutdown provisions). This reasoning should also apply here. Assuming NMU could show that burning biomass is impossible due to winter weather, the BACT limits should nevertheless maximize the use of clean fuel and provide an exception only to the extent necessary. *See also Prairie State*, Slip. Op. at 32 n.25 (providing that temporary interruptions in fuel delivery should not be the basis for establishing long-term BACT

limits). DEQ's failure to do so is clear error and the Board should remand the permit for new BACT limits consistent with the clean fuels requirement of BACT.

III. EVEN IF 100% BIOMASS COULD BE REJECTED IN A TOP-DOWN ANALYSIS, BACT MUST BE ESTABLISHED BASED ON LOW SULFUR COAL.

Even if biomass could be rejected as a clean-fuel basis for BACT, DEQ improperly rejected cleaner forms of coal fuel and attempted based BACT on the worst-case coal fuel that could be burned. This violates the requirement to consider and determine BACT based on clean fuels. Moreover, DEQ magnified this error by confusing 1.5 percent sulfur coal with 1.5 pounds of sulfur dioxide per million Btu (lb/MMBtu) coal. Both of these errors constitute bases for remand.

The permit contains a 0.20 lb/MMBtu limit based on a 24-hour average and a 0.15 lb/MMBtu limit based on a 30-day average. Ex. 1, Permit at 6; Ex. 5, SOB at 4. These limits apparently assume 92% control of SO_2 through the use of limestone in the boiler. *See* Ex. 5, SOB at 4; Ex. 4, Application at 26. However, the 92% removal was applied to the highest sulfur (dirtiest) coal that NMU could possibly burn. The Application and MDEQ's review indicate that the NMU proposes to use low sulfur Powder River Basin coal from either We Energies' Presque Isle plant or Marquette Public Utilities' plant. Ex. 5, Application at 3; Ex. 5, SOB at 2. The Permit limits coal sulfur content to 1.5% by weight, and assumes 12,000 Btu per ton of coal. Permit at 6 § 1.3. This equates to approximately 2 lb/MMBtu. This does not represent typical PRB coal averaged over 30-day or annual

periods, nor the typical PRB coal from the two sources that NMU claims it will procure its coal. The permit should be remanded.

A. DEQ Failed To Respond to the Substance of Petitioner's Comments.

As noted above, the proposed boiler will burn wood or coal from two local power plants: Marquette Board of Power and Light and Presque Isle Power Plant. Ex. 5, SOB at 2. Petitioner commented to DEQ that "EPA's Clean Air Markets web database shows that PRB coal burned at the Presque Isle plant ranges from 1.12 to 1.30 lb SO2/MMBtu, based on uncontrolled emission rates." Ex. 2, Comments of Sierra Club at 19. This range-- up to 1.30 lb/MMBtu-- is thirty-five percent lower than the 1.5% (2 lb/MMBtu) assumed by DEQ to establish a BACT limit based on 92% control of coal sulfur content. Ex. 5, SOB at 4. DEQ responded by stating that "The limit of 1.5% sulfur leaves a reasonable margin of compliance as the coal used at the Presque Isle Power... may, by permit, contain up to 1.5% sulfur, but actually has not exceeded 1.4% sulfur as noted by the commenter." DEQ confuses percentage of sulfur with pounds of SO_2 per million Btu. Petitioner commented that the coal at Presque Isle does not exceed 1.4 *pounds of SO2 content per million Btu*, but DEQ interpreted the comment as if it stated 1.4 *percent sulfur by weight*. Therefore, it is clear that DEQ could not have adequately considered the comment and a remand is necessary. *Knauf*, 8 E.A.D. at 141.

Additionally, Petitioner's comments noted that the range for Presque Isle coal is high, compared to other PRB coals, and that the "more realistic coal sulfur content of 0.75 lb/MMBtu typical of PRB coal" should be used to set BACT, even if biomass clean fuel is not used. Ex. 2, Comments of Sierra Club at 19-20 (citing EPA Region 7 Comments on the

Holcomb Station Expansion Project (Nov. 9, 2006); EPA Region 7 Ltr. To Missouri Dept. Natl. Res. Re: City of Springfield, Southwest Power Station Unit 2; Ltr. From JoAnn Heiman, EPA Region 7, to W. Clark Smith, Nebraska Dept. of Envtl. Quality (Aug. 4, 2006)). DEQ did not, however, consider a limit based on more-representative PRB coal, including whether NMU could obtain more representative PRB coal and at what cost. DEQ's response to comments failed to explain why it rejected cleaner forms of the applicant's preferred fuel. Ex. 6, Resp. to Comments at 20. This is an error and the Board should remand. *Knauf*, 8 E.A.D. at 140-41 (remanding because the record was insufficient to determine whether the agency and applicant considered less polluting options); *see also In re Hawaii Elec. Light Co., Inc.*, 8 E.A.D. 66, 101 (EAB 1998) (finding agency's responses to comments inadequate by failing to explain why).

B. DEQ's BACT Is Erroneous Because Clean Forms of PRB Coal Are Available And Would Result in Lower Emission Rates.

As noted above and in Sierra Club's comments, a review of the EPA's Clean Air Markets web database shows that the PRB coal burned at the Presque Isle plant ranges from 1.12 to 1.30 lb SO2/MMBtu, based on uncontrolled emission rates. This is lower than the 2 lb/MMBtu coal that DEQ assumed to establish an SO2 BACT limit. Additionally, the coals burned at Presque Isle appear to be significantly higher than typical PRB coal. EPA has recently commented on a number of permits that when establishing BACT limits, a permitting agency should assume a typical PRB coal sulfur content, rather than the highest possible PRB sulfur content. For example, EPA Region 7 commented to the Missouri Department of Natural Resources that it was inappropriate to

establish a long-term BACT limit on worst case PRB coal (in that case identified as 1.46 lb SO_2/MMBtu coal). USEPA Region 7 letter to the, Re: City Utilities of Springfield, Southwest Power Station Unit 2 at 2 (attached as Exhibit D to Comments of Sierra Club, attached as Exhibit 10). Instead, EPA noted, permitting agencies should assume an average PRB coal which, from more than twenty years of data, ranges from 0.62 to 0.87 lb SO_2/MMBtu. *Id.*; see also Ltr. from JoAnn M. Heiman, Air Permitting and Compliance Branch, U.S. EPA Region 7, to W. Clark Smith, Nebraska Department of Environmental Quality (August 4, 2006) (stating that EPA gathered western subbituminous coal data from a number of sources which "shows the sulfur content (SO2 equivalent) of the PRB-Wyoming coal delivered to coal combustion units in the Region to be on average of 0.74-0.76 lbSO2/MMBtu") (attached as Exhibit E to Comments of Sierra Club, and attached as Exhibit 11 hereto). DEQ did not consider establishing BACT based on the average sulfur content for PRB coal. Rather, DEQ established a BACT limit assuming that the worst-possible sulfur content coal will be burned at all times. This is an inappropriate basis for establish a BACT limit, particularly in light of the requirement to consider cleaner forms of the fuel the applicant will use. *Id.*; *Inter-Power of New York*, 5 E.A.D. at 134; *Knauf*, 8 E.A.D. at 136; *Old Dominion*, 3 E.A.D. at 794 n.39 ("BACT analysis should include consideration of cleaner forms of the fuel proposed by the source").

DEQ has offered no reason to assume highest-expected sulfur content coal to establish BACT. Even if the cleaner biomass fuel were ignored, BACT must still be calculated by applying the 92% control in the boiler to the lowest sulfur coal available to

NMU—at a minimum this should include a consideration of typical PRB coal and in no case higher than 1.12 to 1.39 lb/MMBtu that is typical of coal at the Presque Isle plant. This would result in a BACT limit between 0.111 and 0.06 lb/MMBtu—much lower than the 0.20 lb/MMBtu limit in the Permit. If the Board does not remand to consider BACT limits based on the cleaner biomass fuel, the Board should nevertheless remand to consider lower SO_2 BACT limits based on cleaner PRB coal than assumed by DEQ. See *Hibbing Taconite*, Slip Op. at 8 (remanding a permit because the permitting agency failed to consider cleaner fuel already burned at the plant).

IV. THE STARTUP/SHUTDOWN PLAN MUST BE INCORPORATED INTO THE PERMIT AND SUBJECT TO PUBLIC NOTICE AND COMMENT.

The Permit requires the NMU to "develop, and submit to AQD for review and approval, a written startup, shutdown and malfunction plan (SSMP)." Permit at 7 § 1.5. Such plan was not created prior to the public comment period and was not available to the public as part of the public review and comment period. This violates the public participation requirements of the Act. Petitioner preserved this issue for review. Ex. 2, Comments of Sierra Club at 36.

In its response to comments, DEQ asserts that it is not required to provide the required plan to the public for comment and, rather, that DEQ should be able to alter the plan without public participation at any time:

> AQD Response
> Changes in the MAP allow for flexibility and quick response to modifications in the operation of the plant which do not meet the definition of modification and therefore do not require a permit. The plan must remain flexible in order for AQD to require appropriate immediate changes when

> necessary without the need for another 30-day comment period. The requirement for the plan is a permit condition which assures that the plan provisions will be enforceable.

Ex. 6, Resp. to Comments at 27. DEQ is wrong as a matter of law.

Contrary to DEQ's assertion that the plant can be developed (and further changed) after issuance, a plan that is part of the permit must be reviewed by the agency prior to permit issuance. *In re RockGen Energy Center*, 8 E.A.D. 536, 553-54 (EAB 1999) (remanding a PSD permit requirement for a startup/shutdown plan that was not reviewed by the agency before permit issuance). Moreover, the post-permit plan development and approval, and subsequent "immediate changes" without public review, violate the public notice and comment provisions of the Clean Air Act. *Id.* (remanding permit requirement for a startup/shutdown plan that was not subject to public notice and review); *see also e.g., Waterkeeper Alliance v. EPA*, 399 F.3d 486, 503-04 (2d Cir. 2005) (invalidating EPA regulation that allowed Nutrient Management Plans to be submitted after public comment and after a NPDES permit was issued). The Board should remand the permit for full review of the plans to be incorporated in to the permit by DEQ and for full public notice and comment on the content of the plants by the public.

V. DEQ'S ATTEMPT TO ACCOUNT FOR INCREMENT CONSUMING EMISSIONS FROM THE NEARBY PRESQUE ISLE PLANT IS ERRONEOUS AS A MATTER OF LAW.

A PSD permittee must demonstrate that the construction project will not "cause, or contribute to, air pollution in excess of any... maximum allowable increase..." 42 U.S.C. § 7475(a)(3). Specifically, the permittee must show that "allowable emission increases from the proposed source or modification, in conjunction will all other applicable emissions

increases or reductions... would not cause or contribute to air pollution in violation of... [a]ny applicable maximum allowable increase over the baseline concentration in any area." 40 C.F.R. § 52.21(k), (k)(2).

The original analysis of increment impacts modeled only the new CFB boiler and existing boilers at the NMU heating plant as increment consuming, all other emission sources in the area were assumed to be contributing to the baseline concentration. Ex. 4, Application at 71. Specifically, the nearby We Energies Presque Isle plant was not originally modeled as increment consuming. Petitioner demonstrated to DEQ that the Presque Isle plant underwent construction through one or more major modifications. Ex. 2, Comments of Sierra Club at 44-54. Therefore, the Presque Isle plant should not be included in the baseline and, instead, is "increment consuming." 40 C.F.R. § 52.21(b)(13)(ii).

DEQ agreed with Petitioner that the Presque Isle Plant was modified, and attempted to account for the Presque Isle plant as consuming increment:

> The SO2 major source baseline date was set by the Clean Air Act 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 PIPP 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 the AQD 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.

Ex. 6, Resp. to Comments at 14. DEQ's attempt erred, however, because it accounted for only the difference between the 1973 emissions and the 2006 emissions (1,335 tons). There is no legal basis for the 1,355 tons used by DEQ. DEQ should have used the "actual" emissions from Presque Isle, as provided by law. 40 C.F.R. § 52.21(b)(13)(ii).

The applicable regulations provide:

> The following will not be included in the baseline concentration and will affect the applicable maximum allowable increase(s)...
>
> *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...

40 C.F.R. § 52.21(b)(13)(ii), (ii)(a) (emphasis added). The definition of "actual emissions, as defined in paragraph (b)(21)" is not the difference between 1973 emissions and 2006 emissions, as DEQ used. Rather, § 52.21(b)(21) defines "actual emissions" 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..." 40 C.F.R. § 52.21(b)(21)(ii). Alternatively, "actual emissions" can be presumed to be the "allowable emissions." 40 C.F.R. § 52.21(b)(2)(iii). These are the only definitions of "actual emissions" under § 52.21(b)(21) that could apply to the Presque Isle plant units here, and neither provides for using 1,335 tons per year as DEQ did.

DEQ should have analyzed the impacts on the available increment, based on an emission rate from the Presque Isle plant closer to the 16,609 tons it emitted during 2006. *Id.*[6] Based on DEQ's assertion that adding only 1,335 tons to the increment-consuming sources resulted in an additional 10% of the increment being consumed, Ex. 6 at 14, the addition of over *ten times* that amount would likely result in increment consumption beyond the 80% allowed by Michigan. The Board should remand to DEQ to reassess whether the plant causes or contributes to a violation of the increment when the "actual emissions" from Presque Isle are modeled as consuming increment.

VI. THE PERMIT MUST ENSURE THAT THE ASSUMPTIONS MADE FOR MODELING ARE ENFORCEABLE.

DEQ failed to account for worst-case emissions in the modeling for compliance with ambient air and increment standards, contrary to law and established EPA policy. Petitioner preserved this issue for review. Ex. 2, Comments of Sierra Club at 34, 36-39.

The Permit does not contain hourly emission limits for PM, PM_{10}, $PM_{2.5}$, SO_2 or CO. *See* Ex. 1, Permit at 6. Moreover, during periods of startup and shutdown, only the annual emission limits apply. *Id.* at 7 § 1.7; *see also* Ex. 6, Resp. to Comments at 24-25. While DEQ contends that *some* restrictions apply to uncontrolled emissions during startup and shutdown periods, *id.* at 24-25, there is no contention that the emission rates set forth as limits in Permit section 1.1 apply at all periods of operation. Rather, only work-practices, and long-term limits (i.e., annual) apply during startup, shutdown and malfunction

[6] According to EPA's Acid Rain Database, the Presque Isle Plant averaged 17,320 tons of SO2/year during 2003 through 2006 and 14,235.3 tons in 2007. *See* www.epa.gov/airmarkets.

periods. *Id.* Nevertheless, the permit limits in section 1.1 were used in modeling compliance with ambient air standards and air increments *as if* they were enforceable short-term limits that applied on an hourly basis for each hour of operation. This is clear error that should be remanded to DEQ.

When no hourly permit emission limits are required (or short-term emission limits that correspond to the air quality standard or increment periods, i.e., a 3-hour limit for 3-hour SO_2 NAAQS), the emissions from the plant are only limited by the physical limits of the plant (i.e., maximum theoretical emissions). This represents the worst-case scenario for emissions, which must be used to model air impacts.

> For both NAAQS and PSD increment compliance demonstrations, the **emissions rate** for the proposed new source or modification must reflect the maximum allowable operating conditions as expressed by the federally enforceable **emissions limit, operating level, and operating factor** for each applicable pollutant and averaging time.

NSR Manual at C.45 (emphasis original); 70 Fed. Reg. 68,218, 68,240 (Nov. 9, 2005) ("At a minimum, the source should be modeled using the design capacity (100 percent load)").

DEQ responded to Petitioners' comments by stating that "[t]he maximum hourly heat input rate and the hourly emissions are limited by the size of the equipment." Resp. to Comments at 15. This is not responsive to Petitioner's comment that the modeling assumed emission rates lower than the maximum hourly emission rate. Ex. 2, Comments of Sierra Club at 37-38. In fact, as set forth in Petitioner's comments and in the tables below, the maximum hourly emissions (based on the maximum heat input rate and emission limits) for NMU are significantly higher than the rates used in modeling by the

applicant and DEQ. *Id.* Most of the hourly emission rates used in the model represent the maximum heat input (205 MMBtu) multiplied by the emission limits in Permit section 1.1 – as if those emission limits were 1-hour averages and applied at all times, including startup, shutdown, and malfunction.

New Boiler

Pollutant	Maximum Hourly Emission Rate (lb/hour)	Modeled Emission Rate
CO	34.85	4.39
SO2	87.80	11.06
PM10	6.15	0.775
NOx	20.50	2.58

Source: Application at 64

Existing Boilers

Pollutant	Maximum Hourly Emission Rate (lb/hour)	Modeled Emission Rate (grams/second)
CO	24.90	3.14
SO2	86.18	10.86
PM10-Increment Rule	4.44	0.56
PM10-NAAQS Rule	4.79	0.60
NOx	10.24	1.29

Source: Application at 66.

DEQ's analysis is deficient. For those pollutants subject to short-term NAAQS or increment standards (3-hour, 8-hour, and 24-hour) that are exempt from emission limits (for which periods of startup, shutdown or malfunction), or are subject to only long-term limits (i.e., 30-day) within which hourly emissions can vary greatly, it is insufficient to assume a short-term emission rate as if subject to always-applicable hourly emission limits. Because emissions from the NMU boiler will not meet the limits in Permit section 1.1 during each hour of operation, those limits cannot be assumed when determining

whether the plant will cause or contribute to a violation of NAAQS or increment. 42 U.S.C. §§ 7473, 7475(a); 40 C.F.R. §§ 52.21(c) and (d); *NSR Manual* at C.45. The Board should remand to DEQ to model the air impacts from the source using maximum theoretical emissions, or to revise the permit so that the BACT limits on Permit page 6 apply at all times, and are averaged during a period that is no longer than the relevant NAAQS or increment period.

VII. NMU DID NOT CONDUCT THE REQUIRED PRECONSTRUCTION MONITORING.

No preconstruction monitoring was done for the NMU PSD permit, as required by law. Petitioner preserved this issues for review by raising it in comments. Ex. 2, Comments of Sierra Club at sec.VIII, pp. 39-44.

As a prerequisite to obtaining a permit to construct, an applicant must provide the Administrator (DEQ by delegation) with data about the background ambient air quality in the area that will be impacted by emissions from the new source. 42 U.S.C. §§ 7475(a)(7), (e); 40 C.F.R. § 52.21(m). DEQ contends that preconstruction monitoring was not required because, it asserts, the agency's "experience with monitoring in the Upper Peninsula shows consistent background levels across a large geographical area including the location of this facility." Ex. 6, Resp. to Comments at 15. The only basis in the record for DEQ's apparent belief that existing monitoring was sufficient is this conclusory statement in the Response to Comments. In fact, DEQ admits that "[n]o written waiver was requested by the permit applicant, and none was issued by AQD." *Id.*

DEQ's decision not to require preconstruction monitoring is legally deficient for at least two reasons. First, it conflicts with the plain language in the Clean Air Act and regulations. Second, according to EPA guidance, to the extent it is even lawful, the use of existing monitors can only be substituted for site-specific, preconstruction monitoring when specific conditions are met and those conditions were not met here.

A. The Clean Air Act And Implementing Regulations Mandate Site-Specific Pre-Construction Monitoring.

Pursuant to the Clean Air Act, an applicant must "agree[] to conduct such monitoring as may be necessary to determine the effect which emissions from any such facility may have, or is having, on air quality in any area which may be affected by emissions from such source." 42 U.S.C. § 7475(a)(7). More specifically, at a minimum, the preconstruction PSD review must "be preceded by an analysis... by the State... or by the major emitting facility applying for such permit, of the ambient air quality at the proposed site and in areas which may be affected..." 42 U.S.C. § 7475(e)(1). This analysis "*shall include* continuous air quality monitoring data *gathered for purposes of determining* whether emissions from such facility will exceed the [NAAQS or PSD increment]." 42 U.S.C. § 7475(e)(2) (emphasis added). The Act specifies that this data "shall be gathered over a period of one calendar year preceding the date of application for a permit under this part unless the State... determines that a complete and adequate analysis for such purposes may be accomplished in a shorter period." *Id.*

The Act makes clear that: (i) preconstruction monitoring is required; (ii) must precede the analysis under §7475(a); (iii) must be gathered specifically for the purpose of

PSD permitting; and (iv) must occur for at least 12 months unless, pursuant to the applicable regulations, a shorter period is allowed. *See also U.S. v. Louisiana-Pacific Corp.*, 682 F.Supp. 1141, 1146 (D. Colo. 1988). The plain language does not allow monitoring data gathered for a different purpose (such as state air quality planning) to be substituted.

The applicable regulations further provide that:

> Any application for a permit under this section shall contain an analysis of ambient air quality in the area that the major stationary source or major modification would affect for... each pollutant for which [the project] would result in a significant net emission increase...
>
> With respect to each such pollutant [for which a NAAQS exists], the analysis *shall contain* continuous air quality monitoring data *gathered for purposes of* determining whether emissions of that pollutant would cause or contribute to a violation of the standard or any maximum allowable increase.
>
> In general, the continuous air quality monitoring data that is required shall have been gathered over a period of at least one year and shall represent at least the year preceding receipt of the application, except that, if the Administrator determines that a complete and adequate analysis can be accomplished with monitoring data gathered over a period shorter than one year *(but not less than four months)*, the data that is required shall have been gathered over at least that shorter period.

40 C.F.R. § 52.21(m)(1). EPA has provided specific exceptions where monitoring is not required, indicating that in all other instances such monitoring is required. 40 C.F.R. §§ 52.21)(i)(8)(i), (m)(1)(v), (vi), (vii).

It is undisputed that no pre-construction monitoring was done for purposes of assessing NAAQS or PSD increment impacts from NMU. Rather, DEQ relied on an existing series of air quality monitors that were installed for, it appears, purposes other

than permitting the NMU boiler. Ex. 6, Response to Comments at 15 (alluding to general experience with monitoring in the Upper Peninsula). This violates 42 U.S.C. § 7475(e) and 40 C.F.R. § 52.21(m).

B. DEQ's Failure To Conduct Preconstruction Monitoring Violates Established EPA Policy.

Similar to the requirements above in the statute and regulation, EPA policy also requires NMU to install and operate a series of ambient air quality monitors in the area around the proposed facility for at least twelve months prior to submitting its PSD permit application. *NSR Manual* at C.16. To use ambient air monitoring data for a period less than twelve months, NMU must provide sufficient evidence for DEQ to determine "that a complete and adequate analysis can be accomplished with monitoring data gathered over a period shorter than one year (but not less than 4 months)..." *Id.* at C.19. Such decision must be based on a determination that the shorter period provides sufficient air quality data "during a time period, or periods, when maximum concentrations can be expected." *Id.* That did not occur. As DEQ's Response to Comments notes, NMU submitted no waiver request and DEQ issued no waiver of preconstruction monitoring. Ex. 6, Resp. to Comments at 15.

Furthermore, even if NMU had submitted a waiver request, such request could have been granted only if NMU showed that valid, sufficient, and representative ambient air quality data already existed from regional monitoring stations. This is a difficult showing to make, and would only be possible in very limited circumstances. *NSR Manual* at C.18.

Under EPA guidance,[7] non-site-specific monitoring data is only sufficient to supplant the need for site-specific monitoring when specific determinations are made as to the data's adequacy. *NSR Manual* at C.18-C.19; *see also Hibbing Taconite*, Slip Op. at 20 ("EPA allows substitution of existing representative data in lieu of having the source generate its own preconstruction monitoring data, *provided* these data meet the criteria in the 'Ambient Monitoring Guidelines for the Prevention of Significant Deterioration' (July, 1980)." (emphasis added)).[8] These determinations include:

1) monitor location;
2) quality of the data; and
3) "currentness" of the data.

NSR Manual at C.19; *Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)*, EPA-450/4-87-007 (May 1987) (hereinafter "*Guidelines for PSD*"); *see also* 73 Fed. Reg. at 28,336 (Providing that "the PSD permitting requirements provide that continuous preconstruction ambient air quality monitoring *must be conducted* for any criteria pollutant emitted in significant amounts," unless the significant monitoring concentration is not exceeded (emphasis added)); *id.* at 28,337 (rejecting the concept of using existing monitoring networks for $PM_{2.5}$); *Louisiana Pacific*, 682 F.Supp. at 1153 (EPA refused to waive pre-construction monitoring required by 40 C.F.R. § 52.21(m)). DEQ made no on-the-record findings that any of these prerequisites were met by the generic monitoring

[7] Petitioner does not concede that EPA has authority to waive site-specific monitoring, in light of the plain language of the Clean Air Act and 40 C.F.R. § 52.21(m), which require monitoring. However, even assuming that EPA can waive monitoring in specific, limited, instances, it only does so to the extent that existing monitoring meets EPA's express minimum criteria.

[8] The criteria cited in *Hibbing* were replaced by the 1987 *Guidelines for PSD* criteria. Regardless, the existing monitoring in Michigan meets none of the criteria in either the 1980 or 1987 standards.

data used. Therefore, even if substituting regional air monitoring data for site-specific pre-construction monitoring was allowed (which the plain language of 42 U.S.C. § 7475(e) and 40 C.F.R. § 52.21(m) belies), such substitution is improper here because DEQ did not make the required findings on the record.

C. If DEQ Had Attempted To Make The Necessary Findings For Substituting Regional Monitoring Data, It Would Have Determined That the Regional Monitors Are Insufficient.

As noted above, to use existing monitors to substitute for site-specific pre-construction monitoring for PSD permitting, EPA policy requires three prerequisite conditions for sufficient location, data quality, and data "currentness" to be met. *See Hawaii Elec. Light Co.*, 8 E.A.D. at 97-98. The monitors that exist in Michigan do not meet these criteria. Although the record before the DEQ contains no evidence regarding the existing monitors, other than the conclusory statement in the Response to Comments that existing monitoring data are sufficient, Petitioner has undertaken to determine facts regarding the monitors based on public reports by DEQ.

1. Monitor Location

Based on publicly-available DEQ documents, the nearest NOx, SO_2, CO, lead and PM_{10} monitors in Michigan is located in Grand Rapids, which is approximately 260 miles from the NMU plant in Marquette.[9] *See* 2006 Annual Air Quality Report For Michigan (attached as Exhibit 12). The nearest $PM_{2.5}$ monitor is in Channing, which is 37 miles (60 km) from the NMU plant in Marquette. *Id.* These monitors simply do not satisfy any

[9] Calculated with "City Distance Tool," http://www.geobytes.com/citydistancetool.htm.

reasonable interpretation of EPA's substitute monitoring policy. It appears that NMU may have used data from other monitors, according to its Application. *See* Ex. 4, Application, Appx. C p. 107. NMU's application indicates that it used an SO_2 monitor in Escanaba, Michigan; a NOx monitor in Two Rivers, Wisconsin; a PM_{10} monitor in Green Bay, Wisconsin; a CO monitor in Milwaukee, Wisconsin; and a lead monitor in Milwaukee, Wisconsin. Escanaba is 51 miles (82 km) from Marquette; Two Rivers is 158 miles (255 km) away; Green Bay is 141 miles (227 km); and Milwaukee is 240 miles (387 km).

Pursuant to EPA guidance, to use monitoring data from existing ambient air quality monitors to determine baseline air quality for PSD permitting, the data must be representative of three specific areas:

> (1) the location(s) of maximum concentration increase from the proposed source or modification,
>
> (2) the location(s) of the maximum air pollutant concentration from existing sources, and
>
> (3) the location(s) of the maximum impact area, i.e., where the maximum pollutant concentration would hypothetically occur based on the combined effect of exiting sources and the proposed new source or modification.

Guidelines for PSD § 2.4.1.; see also *Hibbing Taconite*, Slip Op. at 20. There is no evidence that the existing monitors that DEQ operates satisfy any of these requirements.

DEQ's response to comments merely asserts that the agency's "experience with monitoring in the Upper Peninsula shows consistent background levels across a large geographical area including the location of this facility." Ex. 6, Resp. to Comments at 15. This is not responsive to the specific criteria of monitor location related to the points of

highest impacts, as required by EPA guidance. Nor are most of the monitors relied upon in the Application even located in the Upper Peninsula. Ex. 4, Application, Appx. C, p. 107. DEQ has not provided any adequate showing here that the monitoring data are representative, beyond its one-sentence conclusion. This is insufficient. *Hawaii Elec. Light Co.*, 8 E.A.D. at 105 (requiring the agency to explain why it believes that the use of regional monitors is sufficient).

None of the existing DEQ monitors are located at or near the points of highest modeled impact from the NMU source, existing sources, or maximum impact area. *Compare* Application at 73 (point of highest impact for SO2) *to* 2006 Annual Air Quality Report For Michigan (sites of existing monitors) *and* Application Appx. C p. 107 (monitors used in application). Additionally, when the new or modified source will be located in an area that has multiple air pollution sources *and flat terrain*, the applicant can only use existing, representative monitoring data that is from (1) a nearby monitoring site, *within 10 km* of the points of emissions; or (2) from a monitor that is no more than *1 km* away from either the maximum air pollutant concentration from existing sources or from the area(s) of combined maximum impact from existing and proposed sources. *Guidelines for PSD* § 2.4.1. Here, the terrain is not flat and NMU is located well over 10 km from the nearest monitor for all pollutants.

Moreover, using existing air quality monitor data can only be substituted for site-specific monitoring when the proposed source will be located in an area that is generally free from existing point source impacts. *Id.* The proposed location of the new NMU

source is a "multisource impact area," which is not appropriate for using existing regional monitors. There are two existing coal-fired plants (Presque Isle and Marquette Board of Light & Power) as well as several mining companies (Empire Iron and Tilden Mining) contributing to air pollution in the area, as well as a number of other area sources. Ex. 4, Application p. 68.

2. Data Quality

Even if existing air quality monitors could be used to determine ambient air quality for permitting the NMU plant, the data must meet the same quality standards that on-site monitoring must meet. *Guidelines for PSD* at § 2.4.2. At a minimum, this includes:

1) continuous instrumentation monitoring
2) documented quality control, including calibration, zero and span checks, and control checks;
3) calibration and span gases should be working standards certified by comparison to Nation Bureau of Standards gaseous Standards Reference Material;
4) minimum 80% data recovery

DEQ made no finding that these requirements were met and no evidence related to these requirements is in DEQ's administrative record for this permit. Of course, as noted above, the monitors would not qualify for substitution for pre-construction monitoring for the NMU permit, even if these quality criteria were met, but DEQ's failure to make the necessary investigation and findings further demonstrates the fatal use of existing monitors.

3. Data "Currentness"

Lastly, even if existing ambient air monitoring data met the first two criteria, it could still not be used to permit the new NMU plant because DEQ made no findings that

the data are current. To be used for PSD permitting, existing monitor data must have been collected in the most recent three years (2005-2007). DEQ did not include sufficient information in the permit record to determine this, nor respond to Petitioner's comments on this specific point. However, it does not appear that the monitoring data relied upon by DEQ met the "currentness" requirement. *See, e.g.*, Ex. 4, Application Appx. C p. 107 (data from 2003).

Therefore, for all of these reasons, the DEQ failed to satisfy the requirements of part 52 and the permit cannot be issued. 40 C.F.R. §§ 52.21(i) (prohibiting construction unless all requirements of 52.21(j) through (r) are met), 52.21(m)(1) (requiring preconstruction monitoring). The permit must be remanded.

VIII. DEQ UNLAWFULLY USED SIGNIFICANT IMPACT LEVELS AND ARBITRARY DISTANCES TO AVOID ANALYSIS OF CLASS I INCREMENT.

The proposed boiler is relatively close to a Class I area. Ex. 6, Resp. to Comments at 13 (Seney National Wildlife Refuge is 55 miles away). However an analysis was not done to determine whether the proposed new unit would cause an increase in air pollution in excess of the PSD increment in the Class I area. 42 U.S.C. § 7475(a)(3)(A); 40 C.F.R. § 52.21(k)(2). Instead, NMU and DEQ used Significant Impact Levels ("SILs") to determine whether analysis of impacts should be considered for both Class I and Class II areas. Ex. 4, Application at 56, 70. This issue was preserved for review. Ex. 2, Comments of Sierra Club at 55. In response to comments, DEQ asserted that:

> The EPA New Source Review Workbook states that generally a NAAQS and PSD analysis would be required if emissions from a source increases pollutant concentrations

> by 1 ug/m3 or more (24hr avg) in a Class I area. The closest Class I area to the facility is the Seney National Wildlife Refuge located approximately 55 miles to the ESE. Modeling indicated that the maximum increase the 24-hr average SO2 concentration from the facility at Seney would only be 0.42 ug/m3.

Ex. 6, Response to Comments at 13.

DEQ's reliance on the *NSR Manual* to exempt NMU from increment analysis based on a 1 $\mu g/m^3$ threshold is without legal basis. Unlike the regulations for Class II areas, there are no significant impact levels (SILs) for Class I areas. *In re Hadosn Power 14- Buena Vista*, 4 E.A.D. 258, 261 n.5 (EAB 1992) (SILs promulgated for Class II areas "do not apply to analyses of increment consumption in class I areas"). In fact, although EPA once proposed SILs for Class I areas, that rule was never finalized and has no legal effect. *See* 61 Fed. Reg. 38,250, 38,291-92 (July 23, 1996). Therefore, there is no basis for NMU's failure to demonstrate that no increment violations in a Class I area. The Board should remand to DEQ for this mandatory showing. 42 U.S.C. § 7475(a)(3)(A); 40 C.F.R. § 52.21(k)(2).

Moreover, after the close of the comment period, EPA promulgated a redesignation of the Forest County Potawatomi Tribe's reservation lands as a Class I airshed. 73 Fed. Reg. 23,086 (April 29, 2008). The DEQ erred as a matter of law when analyzing impacts to that Class I area. This issue is appropriate for review because the redesignation, which had been pending for over a decade, was not promulgated until four months after the public comment period closed. Petitioner could not have reasonably raised this issue in its comments. 40 C.F.R. § 124.13. Unlike a pending Supreme Court case, that can be

expected by the end of the Court's term, e.g., *In re Christian County Generation, LLC*, PSD Appeal 07-01, Slip. Op. at 11-13 (EAB 2008), the Forest County redesignation had been pending for years and there was no way to know whether, or when, EPA might grant the Tribe's request. *See* Notice of Proposed Rulemaking, 60 Fed. Reg. 33,779 (June 29, 1995). Petitioner could not have reasonably known that it would occur after the comment period, but before the final permit issued for NMU.

DEQ acknowledged the Forest County Potawatomi Class I area in its response to comments, but refused to analyze impacts to air quality, notify the manager of that area, or ensure compliance with PSD Class I increments because of an arbitrary 100 mile threshold.

> [On] April 18, 2008 U.S. EPA approval of the Forest County Potawatomi Community's request for redesignation of parts of the tribe's reservation as a Clean Air Act Class I area has been considered by the AQD. The reservation is located at least 100 miles (160 kilometers) from Marquette. No additional evaluation is required.

Ex. 6, Resp. to Comments at 13. DEQ is incorrect as a matter of law.

The Clean Air Act provides that every source must demonstrate "as required pursuant to section 7410(j)... that emissions from construction or operation of such facility will not cause, on contribute to, air pollution in excess of any... maximum allowable increase..." 42 U.S.C. § 7475(a)(3); *see also* 40 C.F.R. § 52.21(k). Absent specific statutory or regulatory provisions, this is not limited to sources located within a prescribed 100-mile distance, but, instead, applies to every major stationary source. *Id.*; *see also* 73 Fed. Reg. at 23,095 (stating that, absent a change to the Wisconsin State Implementation Plan, the law

does not provide a distance threshold beyond which the Class I area is not considered in PSD permitting). In other words, the Clean Air Act prohibits all contributions to violations of Class I increments, regardless of the distance to the stationary source being permitted. *See* 40 C.F.R. § 52.21(p); 73 Fed. Reg. at 23,096 ("Sources [undergoing PSD permitting] in Michigan will treat the Reservation as a Class I area as they would any other Class I area under the FIP that currently applies to Michigan").

Furthermore, the public notice for a PSD permit must "notify the public . . . of . . . the degree of increment consumption that is expected from the source[.]" 43 Fed. Reg. 26388, 26409 (June 19, 1978) (the version of 40 C.F.R. § 52.21(r) in effect on June 19, 1979); 40 C.F.R. § 52.21(q) (requiring DEP to "follow the procedures at 40 CFR 52.21(r) as in effect on June 19, 1979[.]"). This is not limited to sources within 100 miles.[10] Additionally, DEQ must notify the Federal Land Manager for the Class I area. 42 U.S.C. § 7475(d)(2)(A). This requirement, also, has no limitation based on an arbitrary distance threshold; it is required whenever the source may have a potential effect on the Class I area. *Id.* DEQ never made a determination of possible effects. Instead, it relied on an unlawful distance threshold of 100 miles to determine that it was not required to comply with Class I requirements for the Forest County Potawatomi Tribe Class I area, including PSD increment analysis and public notice.

[10] It does not appear that the NMU plant is 100 miles away from the boundary of the Forest County Potawatomi Class I area. The distance between Marquette, Michigan and Crandon, Wisconsin is 100 miles.

The Board should remand to DEQ to notify the public of the Class I increment consumption in the Forest County Potawatomi lands and to determine, based on a factual analysis, that no impact would occur or to comply with the Class I impact requirements of the Act.

CONCLUSION

For these reasons we respectfully urge the Board to review and remand the Northern Michigan University PSD permit.

Respectfully submitted, this 12th day of June, 2008.

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