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

In the Matter of Northern Michigan University	)	Permit Number: 60-07 Appeal Number: PSD 08-02

RESPONSE OF THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

NOW COMES respondent the Michigan Department of Environmental Quality (MDEQ), by and through its attorneys, Michael A. Cox, Attorney General of the State of Michigan, and Neil D. Gordon, Assistant Attorney General, and files this response to the petition filed by the Sierra Club (Petitioner). As discussed below, Petitioner fails to show that the MDEQ's permitting decision is based on a clearly erroneous finding of fact or conclusion law or involves an important matter of policy or exercise of discretion that warrants review. The petition should therefore be denied.

Background

On May 12, 2008, the MDEQ, pursuant to a delegation from the U.S. Environmental Protection Agency, issued a federal Clean Air Act prevention of significant deterioration (PSD) permit to Northern Michigan University (NMU).[1] The PSD permit, identified as Permit to Install 60-07 (Permit), concerns the construction of a new circulating fluidized bed (CFB) boiler at NMU's Ripley Heating Plant in Marquette, Michigan. The proposed boiler is designed to operate on wood chips for its heat input. It can also burn coal and natural gas.[2]

[1] Permit, attached as Exhibit 1.
[2] Permit application, cover letter, attached as Exhibit 2.

The boiler is capable of producing 120,000 pounds of steam per hour.[3] Steam from the boiler is used to feed a steam turbine to produce up to 10 megawatts of electricity and to supply steam for use on the campus of NMU.[4]

The Riley Heating Plant includes three existing boilers that operate pursuant to Permit to Install 126-05 that the MDEQ issued on July 21, 2005. Two of those boilers were installed between July 2005 and February 5, 2007, when the MDEQ received NMU's application for the Permit. The heat input from the three existing boilers is 255 million British thermal units per hour (MMBtu/hr). The potential to emit any regulated pollutant from the three existing boilers was limited to less than 100 tons per year pursuant to Permit to Install 126-05.[5]

The new CFB boiler has the potential to emit sulfur dioxide (SO_2) and carbon monoxide (CO) in amounts greater than 100 tons per year for each of those pollutants. The new boiler is therefore a "major stationary source" under the PSD regulations promulgated pursuant to the Clean Air Act. In addition to the emissions of SO_2 and CO, the new boiler will result in a significant net emissions increase of particulate matter and oxides of nitrogen (NO_x).[6]

In its permit application, NMU explained that the wood fuel "will be supplied from independent wood suppliers" while the coal "will come from either the Marquette Board of Light & Power, or the nearby WE Energy Presque Isle Power Plant."[7] Due to the small size of the entire facility and the limited space available for fuel storage, "NMU will receive a shipment every day of solid fuels" by truck, except on weekends.[8] Wood and coal will be stored in silos that have the capacity to store up to a three-day supply of each fuel.[9]

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[3] MDEQ Fact Sheet, attached as Exhibit 3, at 1.
[4] Exhibit 2, at 4.
[5] *Id.*, at 1, 14.
[6] *Id.*
[7] *Id.*, at 3.
[8] *Id.*, at 4.
[9] *Id.*

The MDEQ performed an analysis to ensure that the boiler would be subject to the best available control technology (BACT) for SO_2, CO, NO_x, and particulate matter. With regard to particulate matter, the MDEQ performed its analysis for particulate matter of 10 microns or less in diameter (PM-10).[10] Based on guidance issued by the Environmental Protection Act (EPA), the MDEQ (as discussed in more detail below) also performed a BACT analysis for particulate matter with a diameter of less than 2.5 microns (PM-2.5) using PM-10 as a surrogate for PM-2.5.[11]

The Permit requires that NMU operate a fabric filter (baghouse) and includes emission limits for PM-10 and PM-2.5. The Permit also includes emission limits for SO_2, CO and NO_x.[12]

Petitioner identifies various purported errors in the Permit in its rambling, 58-page petition. None of Petitioner's arguments have merit and its petition should be denied.

Argument

I. Standard of Review

A PSD permit will ordinarily not be reviewed unless it is based on a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review.[13] The preamble to the promulgation of the regulations governing this proceeding states that "this power of review should be only sparingly exercised," and that "most permit conditions should be finally determined at the [permit issuers] level."[14] Accordingly, it is infrequent for the Board to grant review in a PSD permit appeal.[15]

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[10] Exhibit 3, at 3, 4.
[11] Response to Comments, attached as Exhibit 4, at 18
[12] Exhibit 1, at 6, 7.
[13] 40 C.F.R. § 124.19.
[14] 45 Fed. Reg. 33,290, 33,412 (May 19, 1980).
[15] *In re: Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 7 (EAB 2000).

The regulations governing PSD permitting provide that a petition for review must include "a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations[.]"[16] The regulations also contain the following requirement: "All persons, including applicants, who believe any condition of a draft permit is inappropriate . . . must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing)[.]"[17]

The burden of demonstrating that review is warranted is on the petitioner.[18] In order to establish that the Board should grant review, the petitioner must "state the objections to the permit that are being raised for review, and . . . explain why the permit decision maker's previous response to those objections (*i.e.,* the decision maker's basis for the decision) is clearly erroneous or otherwise warrants review."[19]

II. The Permit contains an appropriate BACT limit for PM-2.5

Petitioner claims that the MDEQ erred when the agency used its BACT determination for PM-10 as a surrogate for a PM-2.5 BACT determination. Petitioner does not identify any error in the MDEQ's BACT analysis for PM-10. Instead, it claims that the MDEQ erred by not performing "an independent, top-down (or equivalent) BACT determination for PM -2.5."[20] Petitioner's argument ignores both EPA guidance on PM-2.5 and the MDEQ's analysis.

After the EPA promulgated the national ambient air quality standard for PM-2.5 in 1997, the agency issued a guidance document entitled "Interim Implementation of New Source Review

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[16] 40 C.F.R. § 124.19(a).
[17] 40 C.F.R. § 124.13.
[18] *See* 40 C.F.R. § 124.19(a); *In re: Commonwealth Chesapeake Corp.*, 6 E.A.D. 764, 769 (EAB 1997).
[19] *Commonwealth Chesapeake Corp.*, 6 E.A.D. at 769.
[20] Petition for Review, at 11.

Requirements for PM-2.5" (sometimes referred to herein as the "Seitz Memorandum").[21] The guidance explains that due to "significant technical difficulties that now exist with respect to PM-2.5 monitoring, emissions estimation, and modeling . . ., EPA believes that PM-10 may properly be used as a surrogate for PM-2.5 in meeting NSR requirements until these difficulties are resolved." The guidance concludes that "it is administratively impracticable at this time to require sources and State permitting authorities to attempt to implement PSD permitting for PM-2.5. . . . Until these deficiencies are corrected, EPA believes that sources should continue to meet PSD and NSR program requirements for controlling PM-10 emissions . . . and for analyzing impacts on PM-10 air quality. Meeting these measures in the interim will serve as a surrogate approach for reducing PM-2.5 emissions and protecting air quality."[22]

The surrogate policy contained in the Seitz Memorandum was re-affirmed by EPA in a memorandum dated April 5, 2005.[23] It was re-affirmed again on September 21, 2007 in EPA's proposed rule regarding the PSD requirements for PM-2.5.[24]

In this case, the analysis contained in the record and in the MDEQ's response to comments shows that the MDEQ followed the surrogate approach established by EPA to develop a BACT limit for PM-2.5. NMU demonstrated in its permit application that a fabric filter (baghouse) is considered BACT for the proposed boiler for "PM/PM-10/PM-2.5."[25] The MDEQ, based in part on the analysis presented by NMU, determined that a baghouse and an emission

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[21] Seitz Memorandum, attached as Exhibit 5, at 1.
[22] *Id.* at 2.
[23] Memorandum from Stephen D. Page, Director, EPA Office of Air Quality Planning and Standards, dated April 5, 2005, attached as Exhibit 6.
[24] PSD for Particulate Matter Less Than 2.5 Micrometers (PM-2.5) - Increments, Significant Impact Levels (SILs) and Significant Monitoring Concentration (SMC); Proposed Rule, 72 Fed. Reg. 54,112, 54,114 ("A State implementing a[sic] NSR program in an EPA-approved State Implementation Plan (SIP) may continue to rely on the interim surrogate policy . . .").
[25] Exhibit 2, at 33-40.

limit of 0.030 lb/MMBtu satisfied BACT for PM-10.[26] Pursuant to the surrogate approach contained in the EPA guidance, the MDEQ also concluded that a 0.30 lb/MMBtu met BACT for PM-2.5.[27]

In addition, the MDEQ went beyond the surrogate approach and provided additional reasons why the baghouse satisfied BACT. In its response to comments, the MDEQ explained that it performed a search of EPA's "RACT, BACT, LAER Clearinghouse" (RBLC) database and identified "12 facilities and 14 processes for which a PM-2.5 limit has been proposed or included in a permit." The MDEQ stated:

> For seven of the processes, PM-10 and PM-2.5 are both listed with identical emission limits. The processes include diesel electric generators, gas-fueled electric generation, metallurgy processes, chemical processes, a cement process and slag processing. Of these, ten have no controls listed as BACT. One, the slag process, uses a water spray. Three have add-on control equipment that are either a baghouse (for two metallurgy furnaces) based on the Lowest Achievable Emission Rate (a more stringent standard than BACT) or a bag filter (on a chemical process) based on a case-by-evaluation other than federal regulations. The particulate matter control equipment required for the circulating fluidized bed boiler at Northern Michigan University is a fabric filter (baghouse) system. Per the RBLC, fabric filters are the method installed for control of PM-2.5 from two metallurgy furnaces based on LAER, a more stringent standard than BACT[.][28]

In other words, the MDEQ's determination – that a baghouse and an emission limit of 0.30 lb/MMBtu satisfies BACT for PM-10 and, pursuant to EPA's surrogate policy, for PM-2.5 as well – is reinforced by its RBLC review which showed that a baghouse is add-on control equipment that satisfies LAER for PM-2.5 for other processes.

In addition to ignoring EPA's guidance regarding the surrogate policy, Petitioner maintains that the MDEQ was required to follow EPA's regulations to implement the PSD program for PM-2.5.[29] Petitioner inaccurately asserts that the Permit was issued after EPA

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[26] *Id.*; Exhibit 3, at 3-4; Exhibit 1, at 6.
[27] Exhibit 4, at 3; Exhibit 1, at 6.
[28] Exhibit 4, at 18.
[29] Petition, at 9; 73 Fed. Reg. 28, 321 (May 16, 2008).

promulgated its PM-2.5 implementation regulations on May 16, 2008. In fact, the Permit was issued on May 12, 2008.[30] To confuse matters further, Petitioner also claims that the MDEQ cannot follow the portion of the regulations that instruct permitting authorities to use a PM-10 BACT analysis as a surrogate for a PM-2.5 BACT analysis because such provisions *may* be vacated by a challenge that *may* be filed in U.S. Court of Appeals for the District of Columbia Circuit.

There is no dispute that the Permit was issued on May 12, 2008, before EPA promulgated the PM-2.5 implementation rule on May 16, 2008. The MDEQ's analysis underlying the Permit addressed both PM-10 and PM-2.5 and is entirely consistent with the relevant EPA guidance.

Moreover, assuming for the sake of argument that the MDEQ was required to follow the PM-2.5 implementation rule in making its permitting decision, Petitioner fails to identify any legal requirement that would demonstrate clear error by the MDEQ. The PM-2.5 implementation rule became effective on July 15, 2008. EPA explained that when the rule is in effect, "the PM-2.5 PSD program will no longer use a PM-10 program as a surrogate, as has been the practice under our existing guidance."[31] The rule specifically provides that the surrogate policy set forth in the Seitz Memorandum applies to permit applications submitted before July 15, 2008 that are complete with respect to the PM-2.5 requirements then in effect pursuant to that memorandum.[32]

Here, there is no claim that the permit application was not complete with respect to PM-2.5 pursuant to the surrogate policy set forth in the Seitz Memorandum. Instead, Petitioner speculates that "it is expected that this provision will soon be challenged" in the U.S. Court of

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[30] Exhibit 1, at 1.
[31] 73 Fed. Reg. at 28324.
[32] *Id.*, at 28349-350.

Appeals for the D.C. Circuit, and that it may be vacated.[33] In fact, the rule has not been vacated, and the surrogate policy applies. Petitioner's speculation that rule may be vacated ignores the undisputed fact that the implementation rule remains in effect and that the MDEQ cannot disregard it. Consequently, even if the rule was applicable to the Permit, the MDEQ correctly followed the rule by applying the surrogate policy.

More importantly, the PM-2.5 implementation rule is not applicable in this case because the Permit was issued before the rule was promulgated. The MDEQ correctly followed the surrogate policy which was in effect at the time the MDEQ issued the Permit. Petitioner has failed to sustain its burden of demonstrating clear error.

III. BACT limits for carbon dioxide and N_2O are not required pursuant to section 165(a)(4) because they are not subject to regulation under the Clean Air Act

The PSD requirements in the Clean Air Act provide that a proposed facility is subject to BACT "for each pollutant subject to regulation under [the Act] emitted from, or which results from, such facility."[34] Petitioner asserts that the MDEQ erred by not including a BACT emission limit for carbon dioxide in the Permit. According to Petitioner, Congress intended to make carbon dioxide "subject to regulation" under the Clean Air Act, and thus subject to BACT, when it enacted section 821 of Public Law No. 101-549, 1014 Stat. 2399, 2699 (1990).

Although Public Law No. 101-549 included amendments to the Clean Air Act, it also enacted several provisions that are not part of the Act, including Section 821.[35] Section 821 requires EPA to promulgate regulations requiring the monitoring of carbon dioxide emissions by affected sources under Title IV of the Act.

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[33] Petition, at 9.
[34] 42 U.S.C. § 7475(a)(4).
[35] Section 821 of Pub. L. No. 101-549 is set forth in the notes to Section 412 of the Act, 42 U.S.C. § 7651k (notes).

The fundamental flaw in Petitioner's argument is that Section 821 is unambiguously *not* part of the Clean Air Act. The provisions in Public Law No. 101-549 that amend the Clean Air Act do so in clear, unmistakable terms. For example, section 801 of Public Law. No. 101-549 states "Title III of the Clean Air Act is amended by adding the following new section after section 327: . . ."[36] Similarly, Section 401 of the public law, which amended the Act by adding Title IV, prefaces the provisions of Title IV with the following statement: "The Clean Air Act is amended by adding the following new title after Title III: . . . "[37]

By contrast, nothing in section 821 of the public law indicates that Congress intended section 821 provision to be included in the Clean Air Act itself. The absence of any amending language in section 821 clearly demonstrates that it is not a section of the Act. Therefore, section 821 cannot make carbon dioxide "subject to regulation under the Act."

Petitioner also contends (in a one-sentence statement in its petition) that carbon dioxide is subject to regulation under the Act due to New Source Performance Standard (NSPS) for Municipal Solid Waste (MSW) landfills that EPA has promulgated under section 11 of the Act.[38] The NSPS, however, regulate only "MSW landfill emissions," not the individual components of the landfill gases.

The NSPS for MSW landfills contains emission guidelines for "certain designated pollutants" and specifies that the pollutants to be controlled are "MSW landfill emissions."[39] "MSW landfill emissions" are defined as "gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution or organic compounds in the

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[36] Pub. L. No. 101-549, § 801.
[37] *Id.*, § 401.
[38] *See* Petition, at 16.
[39] 40 C.F.R. §§ 60.30c, 60.33c(a)

waste."[40] In other words, the regulated pollutant is the collection of gases that are emitted from an MSW landfill. The NSPS does not regulate the individual components of the landfill gases.

The record for the NSPS demonstrates that it controls only the collection of emissions that constitute the "composite pollutant" called "MSW landfill emissions." In the preamble to the proposed rule, EPA stated:

> The pollutant to be regulated under the proposed standards and guidelines is "MSW landfill emissions." Municipal solid waste landfill emissions, also commonly referred to as "landfill gas," is a collection of air pollutants, including methane and NMOC's [non-methane organic compounds], some of which are toxic. The composite pollutant is proposed to be regulated under section 111(b), for new facilities, and is proposed to be the designated pollutant under section 111(d), for existing facilities.[41]

The EPA provided additional explanation in announcing the proposed NSPS for MSW landfills:

> The EPA views these emissions as a complex aggregate of pollutants which together pose a threat to public health and welfare based on the combined adverse effects of the various components. As previously stated, these components are methane and NMOC's, including various toxic substances. . . . [T]he exact composition of MSW landfill emissions can vary significantly from landfill to landfill and over time. Although the types of compounds are typically the same, the complex mixture cannot be characterized quantitatively in terms of single pollutants. The EPA thus views the complex air emission mixture from landfills to constitute a single designated pollutant.[42]

Petitioner's assertion – that the components of landfill gases are regulated individually under the NSPS – is wrong and is contrary to the text of the NSPS and the record of its promulgation.

Petitioner also claims that carbon dioxide is "subject to regulation under the Act" because of two Wisconsin regulations contained in its state implementation plan ("SIP"). The first regulation requires certain facilities to submit to the Wisconsin Department of Natural Resources

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[40] 40 C.F.R. § 60.751.
[41] 56 Fed. Reg. 24,468, 24,470 (May 30, 1991).
[42] *Id.*, at 24,474.

an annual inventory of various emissions, including carbon dioxide.[43] The second regulation requires that some "phase I and phase II acid rain units . . . shall be monitored for . . . carbon dioxide[.]"[44]

Petitioner makes the same argument with regard to emissions of nitrous oxide. It identifies regulations promulgated by Wisconsin, one of which requires some facilities to submit an annual inventory of emissions of nitrous oxide (the same regulation discussed above with regard to carbon dioxide). According to Petitioner, EPA's approval of Wisconsin's SIP (which contains these regulations) means that carbon dioxide and nitrous oxide are subject to regulation under the Act itself.

Petitioner ignores the fact that SIPs must include a *minimum* set of "emissions limitations and other control measures, means, or techniques . . .to meet the minimum requirements [of the Act]" and that SIPs may include *additional* "standard[s] or limitation[s] respecting emissions of air pollutants" provided they are not less stringent than the requirements in the Act.[45] The fact that Wisconsin may have promulgated rules that require, for example, monitoring and reporting of carbon dioxide and nitrous oxide emissions in no way makes such rules a part of the Act. Nor do the rules somehow make carbon dioxide or nitrous oxide "subject to regulation under the Act" pursuant to section 165(a)(4).

In fact, Petitioner's argument (if accepted) would magically result in a sweeping new federal program regulating carbon dioxide and nitrous oxide emissions based not on any legislative enactment by Congress, but, instead, based on the promulgation of an administrative rule by Wisconsin. Under Petitioner's novel theory, thousands of operations that have never been subject to PSD requirements would now have to go through the PSD permitting process by

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[43] Wis. Admin. Code § NR 438.03(1)(a)(2008).
[44] Wis. Admin. Code § NR 439.095(1)(f)(2008).
[45] 42 U.S.C. §§ 7410(a)(2)(A), 7416.

virtue of a rule promulgated by Wisconsin. Nothing in the Act shows that Congress intended such a result.

As the MDEQ emphasized, "there are no federal . . . rules requiring limits on carbon dioxide or nitrous oxide emissions from electric generating units," and the MDEQ "cannot suspend the processing of permits until such rules are promulgated."[46] Petitioner's argument should be rejected.

IV. The MDEQ correctly considered fuel availability in establishing the SO_2 limits

Petitioner asserts that the MDEQ should have developed the SO_2 emission limits based on NMU burning 100% wood waste, rather than a mix of wood and coal.

The SO_2 limits take into account the availability of wood waste to be burned by NMU in the proposed boiler. Snowstorms occur regularly in the Marquette area during the late fall, winter and early spring and will prevent the delivery of wood by logging trucks from NMU's independent wood suppliers. Consequently, NMU sought authorization burn coal that would be supplied by the two nearby electric utilities. The MDEQ explained that it was appropriate that the SO_2 limits should be based on burning wood and coal:

> 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 the 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 foreseeable 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.[47]

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[46] Exhibit 4, at 8, 29.

[47] *Id.*, at 19; *see also id.*, at 12 (wood delivery would occur approximately once per day during the week on routes used by logging trucks).

The MDEQ's conclusion that wood waste will not be available is not based on a "largely theoretical possibility" as Petitioner claims.[48] It is based on publicly available information regarding the frequent, severe snowstorms that disrupt travel and wood delivery to NMU in the Marquette area.[49] In light of the fact wood waste will not be available at all times, the Permit's SO_2 limits are based on a fuel mix of wood and coal.[50]

Moreover, the comments Petitioner submitted on the draft permit further demonstrate the unavailability of wood as fuel. In its comments, Petitioner stated: "There remain significant questions about the amount of waste wood available in the Upper Peninsula according to a 2000 Northern Initiatives study. This study indicates that waste wood from primary and secondary manufacturing operations is not available in large quantities in the UP."[51] Those comments support the MDEQ's conclusion that wood is not always available and reinforce the agency's determination that the SO_2 limits cannot be based on burning 100% wood waste.

Petitioner now also asserts, for the first time in its petition, that the MDEQ should have revised the 30-day and 12-month SO_2 limits to "maximize the use of clean fuel."[52] Petitioner never presented this issue to the MDEQ during the public comment period. The regulations governing PSD permitting require Petitioner to "raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing."[53] As this Board explained previously, "The effective, efficient, and predictable administration of the permitting process demands that the

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[48] Petition, at 32.
[49] *See* National Climatic Data Center's website for Storm Events at http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms, and enter Michigan, Marquette County, Snow & Ice "Event Type", and click on "List Storms." The details of individual storms, including the storms the MDEQ identified, can be viewed by clicking on the link for each storm event.
[50] Permit Evaluation Form, attached as Exhibit 7, at 3.
[51] Petitioners' comments, attached as Exhibit 8, at 17.
[52] Petition, at 33.
[53] 40 C.F.R. § 124.13.