E.2 Comment

It has been determined that state-of-the-art combustion techniques and proper and efficient combustion practices represent BACT for toxic air contaminants. Explain in full what this means.

AQD Response

Carbon monoxide, volatile organic compounds, and toxic air contaminants are a product of incomplete combustion of carbon and organic compounds. Factors which impact the combustion process include firing temperatures, residence time in the combustion chamber and fuel and air mixing characteristics. State-of-the-art combustion techniques and proper and efficient combustion practices involve optimal combustion temperatures and the fine-tuning of oxygen and fuel content in the combustion zone in order to minimize the emissions. These combustion techniques have been considered BACT for air toxic pollutants on many similar projects.

E.3 Comment

The AQD has stated that the applicant can eliminate a control alternative by demonstrating to the satisfaction of the AQD that the equipment cannot be realistically installed and operated, and that energy, environmental or economic impacts are unfavorable. What criteria are used?

AQD Response

The federal PSD regulations require that Best Available Control Technology (BACT) be applied for each pollutant subject to the regulations. BACT is an emission limit based on the maximum degree of reduction for a pollutant and is determined on a case-by-case basis. The PSD regulations specifically allow for a control option to be eliminated based upon unfavorable energy, environmental, and/or economic impacts. The economic impact portion of the BACT analysis involves evaluating the cost to control the pollutant at a facility as compared with the cost to control the same pollutant at similar facilities. The cost of control contains any cost associated with energy or environmental impacts. The company's economic health, however, is not factored into the BACT decision. It is important to note that the BACT limit cannot result in an exceedance of a health standard or any state or federal regulation. Although the BACT analysis must include an economic review, there is no cost associated with determining whether or not the emissions meet the health based standards.

E.4 Comment

The New Source Review Workshop Manual (Draft, Oct. 1990) states that emission limits must be short term. The 24-hour average and longer limits in the permit do not meet the requirements of BACT.

AQD Response

The reference to short term emissions in EPA's New Source Review Workshop Manual refers to limiting emissions from a source so that it is not subject to the federal PSD program. EPA has also stated that an annual limit is considered short term if it is averaged on a monthly basis; see "EPA Guidance on Federally Enforceable Requirements" June 13, 1989. The facility is subject to

the PSD regulations and therefore must meet BACT. BACT limits, according to EPA's New Source Review Workshop Manual, must contain appropriate averaging times that are consistent with established reference methods. For a source such as this with emissions that are well below the national ambient air quality standards (NAAQS), a 24-hour average (determined each hour) is considered acceptable.

E.5 Comment

The draft permit does not contain sufficient BACT limits.

AQD Response

BACT is not a mandatory lowest possible limit (maximum degree of reduction). The commenter's claim that the BACT limits are not sufficient is based on the inaccurate assumption that the lowest possible emission rate achieved anywhere is BACT.

The commenter begins by quoting that BACT is "*based on* the maximum degree of reduction." This is correct. The commenter continues with a statement about a "statutory requirement that BACT *represent* the maximum achievable reduction" and from there to a statement that BACT must "*ensure* the maximum degree of reduction." [Italics added.] The commenter further states that "A BACT analysis should *always default* to the best pollution control option *available*." [Italics added.] That claim is incorrect.

BACT is a site-specific determination resulting in the selection of an emission limitation that represents application of control technology or methods appropriate for the particular facility. BACT is determined on a case-by-case basis and includes an evaluation of the feasibility and cost of any control alternative under consideration.

The second step of a BACT analysis is to eliminate "technically infeasible" options from the potentially available options identified at step 1. NSR Manual at B.7. This second step involves first determining for each technology whether it is "demonstrated," which means that it has been installed and operated successfully elsewhere on a similar facility, and if not demonstrated, then determining whether it is both "available" and "applicable." Technologies identified in step 1 as "potentially" available, but that are neither demonstrated nor found after careful review to be both available and applicable, are eliminated under step 2 from further analysis.

The commenter's claim of insufficiency appears to be based on a very limited interpretation of the definition of BACT and ignores the factors, including energy, environmental, and economic considerations which are considered and evaluated in a BACT analysis. The BACT limits are appropriate for this facility, the proposed equipment, and the site at which installation is planned.

E.6 Comment

The MDEQ failed to conduct a BACT analysis for PM-2.5. This is unlawful and must be corrected before a PSD permit can issue. Moreover, there is no legal basis for ignoring the requirement to implement BACT for PM-2.5. PM-2.5 emissions are more aggressively controlled by controlling the pollutant's precursors. It is therefore necessary to target PM-2.5 specifically in a BACT analysis in order to require the greatest feasible reductions in PM-2.5 emissions.

AQD Response

In the October 23, 1997 memorandum the commenter refers to, "EPA believes that it is administratively impracticable at this time to require sources and State permitting authorities to attempt to implement PSD permitting for PM2.5." To date, no measurable standard exists to limit PM-2.5. As the commenter stated, the EPA guidance is for the interim use of PM-10 as a surrogate for PM-2.5. One reason for this is that an approved method exists for measuring PM-10 emissions. Quoting the same memorandum, "EPA believes that sources should continue to meet PSD and NSR program requirements for controlling PM10 emissions . . . and for analyzing impacts on PM10 air quality. Meeting these measures in the interim will serve as a surrogate approach for reducing PM2.5 emissions and protecting air quality."

A search of the EPA RBLC (RACT, BACT, LAER Clearinghouse) database shows 12 facilities and 14 processes for which a PM-2.5 limit has been proposed or included in a permit. 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 case 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 then BACT, yet the commenter states that fabric filters are "not necessarily" effective for PM-2.5 control.

The commenter also proposed "controlling the pollutant's precursors" (of PM-2.5). Precursor emissions are also addressed in the October 23, 1997 memorandum as a parameter to be included in a comprehensive modeling system. At this time, that goal is not achievable. The lack of available data on PM-2.5 emission rates creates technical difficulties in evaluating the potential effectiveness of controlling the precursors of PM-2.5.

E.7 Comment

The permit lacks BACT limits for CO_2 and N_2O.
Note: Greenhouse gas emissions are also addressed in responses to Comments A.4 and K.2.

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.

E.8 Comment

The BACT determinations for the boiler did not include a sufficient analysis of cleaner production processes, including wood fuel. Merely stating a generalized concern about increased costs, fuel availability, or economics as NMU has done here, is not enough to justify rejecting a method of reducing emissions. BACT limits must be based on waste wood, not coal.

AQD Response

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.

E.9 Comment

There is no analysis of natural gas as a clean fuel option

AQD Response

The basic design of the facility under review is that of a solid fuel boiler with the basic purpose to generate heat and electricity. Northern Michigan University applied for a permit to burn wood, a renewable resource, with coal as an alternative fuel. The use of these available fuels in the proposed power plant allows natural gas to be available and affordable for heating homes, businesses, and industrial facilities. The Environmental Appeals Board's prior decisions support the principle that a permitting authority should consider BACT for the project for which an application has been submitted and not redefine the source.

E.10 Comment

BACT must be established based on low sulfur coal.

AQD Response

BACT is established based on the characteristics of the coal to be trucked to the NMU facility from the two existing local power plants. Coal is intended to be used as the secondary fuel source, with wood as the primary fuel. The limit of 1.5% sulfur leaves a reasonable margin of compliance as the coal used at the Presque Isle Power Plant (one of the two local stockpiles from which coal would be obtained) may, by permit, contain up to 1.5% sulfur, but actually has not exceeded 1.4% sulfur as noted by the commenter. Northern Michigan University proposes to install storage silos for both wood and coal with a storage capacity sufficient for three days operation of the boiler. There is no space available at the site for a stockpile of fuel separate from that used at the local power plants.

E.11 Comment

The coal-based BACT determination for sulfur dioxide is inadequate. For example, the Roquette, America, Inc. CFB boiler in Iowa uses both limestone injection in the CFB boiler and a post-combustion scrubber.

AQD Response

The boiler cited as an example by the commenter is not comparable to that proposed by Northern Michigan University for at least two reasons. First, the Roquette corn dryer boiler is about five times as large as the NMU boiler (996 MMBtu/hr heat input vs 185 or 205 MMBtu/hr heat input (depending on the fuel). Also, the Roquette boiler is allowed to burn coal with a sulfur content of up to 6 per cent by weight vs. the 1.5 per cent limit for the NMU boiler. This results in allowable emissions of 392.6 tons per year of sulfur dioxide in Iowa, with a post-combustion scrubber versus a limit of 125 tons in Michigan without a post-combustion scrubber. The cost of the additional control equipment is justified in Iowa example to control significantly higher potential emissions of sulfur dioxide generated by both the larger size boiler and the higher emission rate from the high sulfur coal.

E.12 Comment

The BACT analysis failed to consider a circulating dry scrubber. The commenter cites several power plants as examples where a circulating dry scrubber is BACT. A wet scrubber is the top ranked pollution control option for sulfur dioxide if coal fuel is assumed. The commenter cites several power plants as examples where this technology is installed to meet BACT limits.

AQD Response

AQD completed a thorough BACT review which included an evaluation of facilities of a similar size and design to the 10 MW coal and wood fired CFB boiler with limestone injection proposed by Northern Michigan University. The commenter lists approximately 20 facilities where a circulating dry scrubber or a wet scrubber has been installed as add-on control equipment. The facilities cited by the commenter range from 11 to 75 times as large as the proposed plant (110 MW to 750 MW).

It is not appropriate to compare the larger facilities where the cost of control is justified by the higher emission rate to the smaller NMU facility.

USEPA routinely establishes both a percent reduction standard and a maximum outlet concentration or mass emission standard for emission control in New Source Performance Standards. This approach acknowledges that standard of control of a large source of air pollution (percent removal standard) is different from control of a more dilute source of emissions where the total (mass) emissions are small.

Further, for the large sources cited, the commenter lists partial information, always including control efficiency while neglecting the mass emission rate. Fuel sulfur content which was higher than the NMU limit at many of the examples was also left out of the discussion. The commenter did mention the fuel sulfur content at one facility of the 20 that proposed burning coal with a lower sulfur content (0.45%) than that proposed at Northern Michigan University.

One example cited by the commenter was for a retrofit of cyclone-fired boilers installed in 1959 and 1962 burning a mix of 85 percent coal and 15 per cent petroleum coke with a design value of 7 per cent sulfur for the coke. The retrofit was part of a statewide emission reduction plan implemented by the utility company to bring all of the company's existing generating facilities into compliance with new federal regulations. This is not comparable to the proposed NMU facility.

Another facility described as burning "low sulfur coal" is praised for achieving 98% sulfur dioxide control. The allowed annual emissions are 2,254 tons which contrasts greatly with the limit of 125 tons per year in the NMU permit with 92 percent control. Also, the "low sulfur coal" was 1 percent sulfur, the same as one of the two supply alternatives for NMU.

The BACT limits of 0.20 lb/MMBtu on a 24 hour average and 0.15 lb/MMBtu on a 30 day average are appropriate.

E.13 Comment

The BACT limits should be expressed by energy output to take into account the efficiency of the generating process.

AQD Response

Emission limits in terms of energy output in order to account for energy efficiencies of the generating source are being considered as federal regulations are amended. In the February 28, 2005 proposed rule amendments to the NSPS Subpart Db, EPA specifically requested comment on the question of whether emission limits, if EPA decides to adopt an emission limit format, should be expressed in an input-based or output-based format. As background for this proposal, EPA referenced the 1998 NSPS amendments, where it was concluded that an output-based format provided only limited opportunity for promoting energy efficiency at subpart Db, 40 CFR Part 60, units. In addition, EPA concluded that an output-based format could impose additional hardware and software costs because instrumentation to measure energy output generally did not exist at industrial-commercial-institutional facilities. For industrial-commercial-institutional units that generate electricity, EPA considered an optional output-based emission limit in units of pounds of pollutant per MWh of gross energy output. Ideally, the output-based emission limit would be based on emissions data and energy output data that were measured simultaneously. However, output-based emission data are not readily available for industrial steam generating units. Most emission test data today are reported based on energy input, consistent with current State and Federal compliance reporting requirements. In the absence of measured output-based

data, EPA was seeking comment on the issue of whether to require output based limits in Db noting that if they did such a limit would be developed using input-based emissions data and a baseline energy generating efficiency. Based upon comments received during the public comment period, the final rule dated June 13, 2007, did not require output based emission limits for Db subject sources.

As to the need for a BACT emission limit in terms of energy output, there is no requirement in the BACT process to limit emissions in this manner. The permit applicant initiates the process and, in doing so defines the proposed facility's end, object, aim, or purpose – that is the facility's basic design, which is reflected in the permit applicant's schematic design for the proposed facility. To define the BACT emission limit in terms of the efficiency of the proposed process would limit the BACT evaluation to that single factor. BACT is a site-specific determination resulting in the selection of an emission limitation that represents application of control technology or methods appropriate for the particular facility. BACT is determined on a case-by-case basis and includes an evaluation of the feasibility and cost of any control alternative under consideration.

E.14 Comment

The NOx BACT limit is not based on the maximum degree of reduction from the top ranked control option. Selective catalytic reduction achieves a removal efficiency of 90%. Examples are listed. NMU has not demonstrated that an SCR is not cost effective.

AQD Response

As with the analysis of the sulfur dioxide BACT limit by this commenter, the comment on the BACT limit for oxides of nitrogen does not take into account the size of the facility. The NMU heat and power plant is 10 MW and the examples cited are for a 750 MW and a 500 MW facility. AQD concurs with the evaluation by NMU that SCR is not cost effective for this facility. The NOx limit of 0.10 lb/MMBtu is appropriate.

E.15 Comment

The draft permit does not contain any BACT conditions for material handling. Four facilities are listed as examples. Work practice standards cannot be substituted.

AQD Response

AQD disagrees with the commenter. The four examples cited are 1230 MW, 790 MW, 500 MW, and 660 MW facilities. The permit is for a 10 MW facility. Work practice standards such as the enclosed conveyors and storage silos with vent filters are BACT based on the review for this case.

Where a control standard is specified as BACT for material handling it is these same controls (vent filters). The annual maximum fuel delivery to NMU for each fuel, if it were to be used exclusively, is estimated to be less than 70,000 tons of bituminous coal, less than 100,000 tons of Powder River Basin coal, or less than 200,000 tons of wood. Facilities exist with throughput rates 5 to 10 times higher than these or greater, where storage is in a pile (not a silo), delivery is by rail cars, not individual trucks. BACT at such large facilities consists of work practice standards to minimize drop heights and use dust suppression and that is an approved BACT standard. For the smaller solid fuel throughput rates at the proposed Northern Michigan University facility, MDEQ has

determined BACT to include the work practice standards listed in detail in the response to Comment D. 4 in this Response to Comments document.

F. Permit Requirements, General

F.1 Comment

An application for a PSD permit must include a description of the nature, location, and typical operating schedule. These items are not defined.

AQD Response

The facility is defined as a combined heat and power plant. The location can be found on maps included in the application and the hours used in modeling are the maximum operating hours, 24 hours per day 365 days per year.

F.2 Comment

What wood will be used? What is "wood waste"?

AQD Response

The draft permit includes this condition:

Material Usage Limits
1.2 The permittee shall not process or combust any fuel in EU-CFB-BOILER other than bituminous and subbituminous coals, wood as defined in 40 C.F.R. 60.41b, and natural gas. **(R 336.1224, R 336.1225, R 336.1401, R 336.1901)**

40 C.F.R. 60.41b defines "wood" as follows:

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

For additional clarification concerning the possible sources of the wood, the following definition is from the U.S. Department of Energy, Energy Information Administration:

> "Wood is a substantial renewable resource that can be used as a fuel to generate electric power and useful thermal output. Wood for use as fuel comes from a wide variety of sources. The Nation's forestland (or timberland) is the primary, and in most cases original, resource base for fuelwood. Wood for fuel use is also derived from private land clearing and silvi-culture and from urban tree and landscape residues. A third major wood resource is waste wood, which includes manufacturing and wood processing wastes, as well as construction and demolition debris."

F.3 Comment

Coal should be limited more than it is in the permit

AQD Response

NMU has clearly expressed an intent to use wood waste as the primary fuel source. The limit on coal usage is both a compromise from the original permit application which requested the flexibility to use either wood or coal 100 per cent of the time and a contingency plan to prevent interruption of an adequate fuel supply. The coal usage limits result from calculations based on the BACT emission limits for sulfur dioxide. Part of the basis used in the BACT review is to allow for fuel flexibility based on both the limited three day fuel storage capacity available at the site and the likelihood of severe winter weather events which could interrupt any of the fuel supplies. If only coal can be obtained, the permit is written to allow for continued operation of the facility without penalty, but the highest sulfur coal can only be used for part of any 30-day period.

G. Permit Requirements, Emissions

G.1 Comment

The draft permit unlawfully excludes periods of startup and shutdown. Uncontrolled emissions must be used to model air impacts. The permit grants a free pass from all emissions during these periods.

AQD Response

The commenter cites Special Condition 1.7 of the draft permit as the basis for this comment and proceeds to make the claim that the permit is unlawful. AQD disagrees with this interpretation of the permit.

There are no startup, shutdown, or malfunction exceptions listed in the table of emission limits, SC 1.1a through SC 1.1k.
The permit lists four operating parameters in this context. The relevant permit conditions, 1.6 and 1.7, are as follows:

1.6 The permittee shall operate and maintain EU-CFB-BOILER, including air pollution control equipment and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions. Operating limits shall be established during the initial performance test for EU-CFB-BOILER and shall include:

a. maximum fuel use rate
b. minimum exhaust gas flow rate
c. minimum fabric filter pressure drop
d. selective non-catalytic reduction system ammonia or urea solution concentration and injection rate, and the gas temperature range at the injection location

(R 336.1205, R 336.2802)

1.7 Following the date on which the initial performance test for EU-CFB-BOILER is completed the permittee shall not operate above any of the applicable maximum operating limits or below any of the applicable minimum

operating limits listed in SC 1.6 at all times except during periods of startup, shutdown and malfunction. Operating limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits. **(R 336.1205, R 336.2802)**

Also, in addition to the fact that the CFB boiler will be operated with emissions monitoring equipment (COMS and/or CEMS for SO2, NOx, gas flow rate and CO2 or O2), uncontrolled emissions may not continue for more than two hours without violating General Condition No. 7 of the permit. The AQD follows up on the required report with mandatory corrective actions to prevent a recurrence of the excess emissions.

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

Finally, a detailed startup, shutdown, and malfunction plan is required in SC 1.5 of the permit.

1.5 The permittee shall develop, and submit to the AQD for review and approval, a written startup, shutdown and malfunction plan (SSMP). This SSMP must describe in detail, procedures for operating and maintaining EU-CFB-BOILER during periods of startup, shutdown, and malfunction, and include a program of corrective action for malfunctioning process equipment and associated air pollution control and monitoring equipment. The permittee shall operate EU-CFB-BOILER according to the provisions of the SSMP during periods of startup, shutdown, or malfunction. **(R 336.1911)**

The annual limits include all operating scenarios. Therefore, startup and shutdown emissions must be included in the tons per year calculations.

H. Permit Requirements, Monitoring

H.1 Comment

Because the emission limits are BACT, the Continuous Assurance Monitoring Rule is applicable.

AQD Response

The Compliance Assurance Monitoring rule is applicable on a pollutant-specific basis to emission units at facilities subject to the Renewable Operating Permit (ROP) requirements. This facility is not required to comply with the rule as it does not currently meet the definition of a major source subject to an ROP. Also, emission units subject to certain federal emission limitations or standards proposed after November 15, 1990 are exempt from the Compliance Assurance Monitoring rule. The CFB boiler is subject to the amended new source performance standard, 40 CFR Part 60 Subpart Db which has an effective date of February 27, 2006.

I. Permit Requirements, Process/Operational Limits

I.1 Comment

NSPS Subpart Y for Coal Preparation Plants is applicable to this facility.

AQD Response

The smallest facility where enforcement of NSPS Subpart Y would be required is one which processes 200 tons of coal per day. The NMU facility is not expected to process that much coal. The applicable regulation (40 CFR 60.252(c)) sets the standard for particulate matter emitted from coal processing and conveying equipment, a coal storage system, or a coal transfer and loading system. The standard is that the discharged gases may not exhibit 20 percent opacity or greater. This same opacity standard applies to all sources of air emissions in Michigan per state regulations, regardless of size, so in this case, the state regulation applies even though the amount of coal processed is less than the NSPS applicability threshold of 200 tons per day.

I.2 Comment

The startup shutdown malfunction plan must be incorporated into the permit and subject to public notice and comment. Post-permit plan development and approval is unlawful. The plan must be a part of the permit which is presented for comment. A condition allows changes in the malfunction abatement plan (MAP) with the approval of the district supervisor. This allows the DEQ to make important changes to the permit without informing the public.

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.

I.3 Comment

There should be control of fugitive dust from truck trackout.

AQD Response

A small number of trucks will make deliveries to the site and the site itself is very small. Based on previous experience, AQD is not requiring a specific fugitive dust control plan for this facility at this time. However, the permittee is required to minimize fugitive dust emissions in material handling operations in Special Condition 3.1 of the permit for wood and coal unloading, 5.1 for limestone, and 6.1 for ash handling. As a contingency, AQD reserves the right in Special Condition 9.1 to require a fugitive dust control plan without reopening the permit.

9.1 Upon written notification by the Air Quality Division, the permittee shall develop, implement, and operate a program for the control of fugitive emissions from the facility in accordance with the requirements of R336.1371 and R336.1372.

J. Permit Review Process

J.1 Comment

Does the AQD's permit review process evaluate protecting the public health?

AQD Response

The AQD's permit review does include a review of the potential impact of the emissions on public health. Specifically, staff reviews the site of the facility to verify the number of surrounding residences and public institutions such as schools or churches and their distance to the proposed site. The facility operation is studied to determine how the process works, what raw materials are used in the process, and what air pollutants are emitted. The applicable federal, state and local regulations are identified along with what air pollution control equipment is required for the facility to comply with these requirements. Using computer air quality dispersion modeling, the maximum ambient air quality concentrations are determined outside the facility's fence-line, based on the proposed emissions and local meteorological data. For mercury, an assessment of the potential deposition impacts to levels in fish and anglers' exposures was also performed. If the results of the analysis show that all applicable state and federal regulations will be met, permit conditions are written, which would ensure that the proposed facility design and operation meet all legal requirements, that the permit conditions are enforceable and that sufficient monitoring, recordkeeping and reporting would be performed to determine compliance with these draft permit conditions. These measures ensure the protection of public health.

K. Miscellaneous

K.1 Comment

With changes in regulations on pollutants like carbon dioxide expected in the near future, why don't we just postpone the permit process until we have all the latest information available from the federal government?

AQD Response

Each permit is subject to the laws that are in place at the time of the permit review and issuance. Legally, the DEQ cannot postpone a permit so that the facility is subject to new regulations. Planning, design, and construction of new electricity generating facilities requires years to complete. NMU has identified a need for additional heat and power capacity and has selected the proposed facility as the means of adding the capacity. The plan was approved by the University Board of Trustees in October, 2006.

AQD cannot delay a decision on this permit application based on the potential for future regulations. The decision must be based on the present standards.

K.2 Global Warming/Renewable Energy Comments
Note: Greenhouse gas emissions are also addressed in responses to Comments A.4 and E.7.

- Coal is the largest source of greenhouse gases
- There should be limits on CO2 emissions
- Renewable energy is the right way coal is the wrong way
- Future costs of renewables are stable and future costs for fossil fuels will increase
- The costs of future regulation of carbon and CO2 should be considered. There are no greenhouse gas emissions from wind or solar power or renewable energy
- Energy conservation should be considered as an alternative to building more generating capacity.
- The state and the university should exhibit environmental stewardship and leadership by making the responsible choice of clean energy for our economic future and encourage new technology for a safer, cleaner environment.

AQD Response

The state of Michigan is concerned about global warming and recognizes the arguments in favor of renewable energy and new technology. Governor Granholm actively promotes action to achieve these goals when meeting with business people, lawmakers, and citizens of the state.

With respect to wind and solar power, the CFB boiler is intended to be operated at full capacity. A wind power plant would be far less reliable due to variations in wind speed and even the very presence of wind. Electricity generation using solar power is impractical as a daily process in a northern climate and has not been demonstrated as feasible for the combination of the small parcel of land available at Northern Michigan University and the proposed plant capacity.

The MDEQ is required to review and consider the applications for permits in accordance with applicable existing state and federal law. There are no federal or state rules requiring limits on carbon dioxide emissions from electric generating units, and the DEQ cannot suspend the processing of permits until such rules are promulgated. Although carbon dioxide is an air contaminant, under Michigan's rules carbon dioxide has been specifically excluded from the definition of a toxic air contaminant since the first adoption of the definition on April 17, 1992 [Rule 336.1120(f)(xi)].

The facility will emit carbon dioxide, a greenhouse gas. There are presently no regulations limiting emissions of carbon dioxide. However, the MDEQ and Governor Granholm share your concern about climate change and its potential negative impacts on the state of Michigan.
Executive Directive No. 2006-2 was designed to help Michigan develop an alternative energy industry. It directs the creation of the 21st Century Energy Plan. The Plan recommends that Michigan's future energy needs be met through a combination of renewable resources and the cleanest generating technology, with significant energy savings achieved by increased energy efficiency. The Plan recommends that all retail electric energy suppliers be required to obtain at least 10 percent of their energy supplies from renewable resources by 2015. A renewable portfolio standard provides protection from volatile electric energy markets, and provides protection from costs associated with expected federal taxes on greenhouse gas (GHG) emissions.

According to the press release for the 21st Century Energy Plan,

Michigan's load growth is expected to grow an average of 1.2 percent per year over the next 20 years. Recognizing that the average age of Michigan's power plants is 48 years, and that no Michigan utilities have undertaken baseload construction in almost 20 years, it is important that a new baseload plant can be built and financed while protecting customers from unnecessary costs. Modeling shows a need for a new baseload power plant no later than 2015, and since build time on a baseload plant is at least six years, the state should take action now.

Building upon these Executive Directives and to more fully realize its leadership role in the area of climate change, Governor Granholm has created a Michigan Climate Action Council (MCAC) to develop a comprehensive climate action plan for the state. The plan will provide recommendations for reducing GHG emissions in Michigan and will build upon previous measures to reduce the state's reliance on energy sources from outside its borders. The MCAC will prepare its preliminary recommendations and goals by April 30, 2008, with final recommendations and goals to follow by December 31, 2008. The state of Michigan will implement this climate action plan in a coordinated and broad-based manner. Additional information on the MCAC can be found at www.miclimatechange.us.

On November 15, 2007, Governor Granholm joined nine other Midwestern leaders in signing the Midwestern Greenhouse Gas Accord. This Accord will serve as a regional strategy to achieve energy security and reduce GHG emissions. The Accord will also establish GHG reduction targets and time frames, develop a market-based and multi-sector cap-and-trade mechanism to help achieve those reduction targets, establish a reduction tracking, management, and crediting system, and develop and implement additional steps as needed to achieve the reduction targets.

K.3 Comment

A decision on the permit should be delayed until the people have a chance to accept or reject the location of the plant. Comments were received on the location of the plant near residential properties.

AQD Response

The location of any facility is an issue addressed by local government through the planning and zoning processes. The Air Quality Division does not control the selection of sites for industrial facilities nor does it have jurisdiction over local zoning issues. Site selection is done by the permit applicant. The issuance of a Permit to Install by the AQD does not guarantee local site approval. A site assessment is conducted by Air Quality Division staff as a part of the permit review process and air pollution impacts are reviewed.

K.4 Comment

Comments were received regarding evaluation of secondary environmental impacts due to coal mining in other states, limestone mining, forestry practices, and potential damage to endangered plants when or if fuel wood is harvested for use in the plant.
Note: Secondary impacts are also addressed in responses to Comments A.2 and D.2.

AQD Response

The AQD only has jurisdiction over air quality issues. The Office of Geological Survey and Land and Water Management and Water Divisions of the Department of Environmental Quality may also regulate this facility. The Permit requires the facility to obtain all necessary approvals from these Divisions and any other units of government as required by law.

K.5 Comment

Is the electricity generating plant warranted for this area? Over 500 MW of generating capacity already exists so this plant is not needed.

AQD Response

The AQD does not have authority to determine whether or not a type of industry is warranted for a specific area. The air permitting process involves a thorough review of the proposal and its impacts on the environment including whether or not the emissions will comply with state and federal health standards. Emissions from the plant will meet the NAAQS and the AQD health-based screening levels.

K.6 Comment

What is the state doing to increase conservation to reduce our need for additional electricity generation?

AQD Response

Neither the Department's Rules for Air Pollution Control nor the Clean Air Act deal with conservation of energy issues. The laws are incorporated to ensure that economic growth will not contribute to a significant increase in air pollution. The AQD has determined that the impacts from the facility will not contribute to a significant increase in air contaminants.

K.7 Comment

The DEQ is very comfortable in being able to hide behind rules which are very accommodating to industry.

AQD Response

The AQD disagrees. Michigan was one of the first states in the United States for developing rules for regulating air toxics. The rules promulgated by Michigan have been used as a model by other states in regulating air toxics. When state rules are developed, they are usually developed in a collaborative process between the regulators, environmentalists, affected industry, academia, and

other interested parties. The rules are promulgated according to the administrative procedures act. If a person feels that state regulations are too permissive, that person or persons has an obligation to participate in the regulatory process and propose the necessary changes which address their concerns or participate directly in the rules development process.

The AQD has very little discretion in how air use permitting is performed since we are required to follow all applicable state and federal regulations. Additionally, any state's regulations can be no less stringent than federal regulations. The Air Quality Division must have a regulatory basis (either a state rule or a federal regulation) for developing the conditions of a permit.

IV. SUMMARY OF COMMENTS RECEIVED IN SUPPORT

The following is a list of the benefits cited in the verbal testimony and five letters received:

- The new combined heat and power plant can be used as a research facility for student education in the use of renewable energy from wood.
- The project will create 100 new jobs in the forest industry.
- Construction jobs will be created by the project.
- The project will create a new market for wood products.
- Michigan regulations are sufficient to control the emissions and no health hazard will result from the project.

Prepared by: David K. Riddle, Senior Environmental Engineer