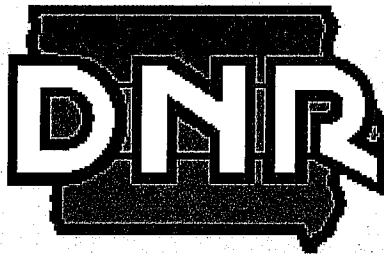


**Iowa Department of Natural Resources
Environmental Services Division
Air Quality Bureau**



**Response to Public Comments for the
Prevention of Significant Deterioration Permits for
Project Number 06-541, Plant Number 78-01-026**

**MidAmerican Energy Company
7215 Navajo Road
Council Bluffs, IA 51501**

Introduction

This document includes all responses to comments made during the public comment period for Prevention of Significant Deterioration (PSD) construction permits for MidAmerican Energy Company (MidAmerican) for Project Number 06-541. The application for this project was received on October 12, 2006. The public comment period began on April 9, 2007 and ended on May 9, 2007. No public hearing was requested prior to the April 23, 2007 deadline listed in the public notice.

This document has been prepared by the Department to fulfill the requirements of 567 Iowa Administrative Code (IAC) 33.3(17) *Public participation*.

MidAmerican has requested amendments to thirteen of the nineteen permits that were issued in June of 2003. Most of the amendments are to stack parameters (i.e. stack height, temperature, flow rate, etc.). In addition, the rated capacities of some of the units also changed and MidAmerican requested to have three of the permits rescinded as there were permitted units that were not constructed. Also, MidAmerican has requested the removal of the 112(g) limits in the main boiler permit. Comments on the amended permits were limited to those items that were changed.

There were eleven units and emission points constructed during the construction phase of the project without a construction permit (i.e. "as-builts"). The emissions from the "as-built" units consist of PM & PM₁₀. A Notice of Violation (NOV) was issued to MidAmerican on March 20, 2007 for these "as-built" changes and for the "as-built" changes that occurred when MidAmerican did not install emission units and emission points in accordance with issued permits.

Response to Comments from Public Comment Period

The following comments are those that were received by the Department during the public comment period for the draft PSD permits for MidAmerican Energy.

MidAmerican Energy Company (MidAmerican)

This document addresses MidAmerican's two (2) separate emails providing comments to the Department. The organization of these comments will be the same as used by MidAmerican. MidAmerican's comment will be summarized and excerpted, where possible.

Section I: Email of May 1, 2007

1) CBEC 4 Boiler (Permit 03-A-425-P2)

Comment: Condition 14.D.(1) states "520 ng/J (0.60 lb/MMBTU) heat input...". The condition should read "520 ng/J (1.2 lb/MMBTU) heat input...".

Response: The permit was corrected to list the appropriate NSPS standard of 1.20 lb/MMBTU.

2) Flyash/FGD Waste Vacuum System Exhauster #3 (Permit 03-432-P2)

Comment: The cover page of the permit should list the control equipment as "Baghouse (CE 168 or CE 169)" as either baghouse can be used for this emission unit.

Response: The requested change was evaluated in the application review and amended in the final permit.

3) Lime Storage Silo (Permit Number 03-A-434-P2)

Comment: In addition to size of the silo (1,875 tons of lime), add the maximum fill rate of 30 tons/hr to the cover page of the permit under the description of the emission unit.

Response: The clarification was made in the final permit.

4) Unit 4 Lime Filter Separator Vacuum Exhauster No. 1 (Permit Number 03-A-435-P1)

Comment: The control equipment identification on the cover page of the permit should read "CE 162" and not "CE 162A".

Response: The requested amendment was made in the final permit.

5) Lime Filter Separator (Permit Number 07-A-386-P)

Comment: The control equipment identification on the cover page of the permit should read "CE 162" and not "CE 162B".

Response: The requested amendment was made in the final permit.

6) Flyash Recycle Silo Vacuum System Exhauster No. 3 (Permit Number 07-A-391-P)

Comment: The cover page of the permit should list the control equipment as "Baghouse (CE 171 or CE 172)" as either baghouse can be used for this emission unit.

Response: The requested amendment was made in the final permit.

Section II: Email of May 9, 2007

Comment: For permit 78-A-174-S2, the permit draft permit lists the exhaust flow rate as 18,800 scfm. The information submitted by MidAmerican listed the design exhaust flow rate as 26,500 scfm on the CS form. The unit was modeled at 21,947 scfm taken from test data.

Response: The permit has been amended to list the flowrate as 21,950 scfm which corresponds to the tested and modeled flowrate.

Environmental Protection Agency (EPA)

This portion of the document addresses comments from EPA Region VII received by the Department during the public comment period. The organization of these comments will be the same as used by EPA. EPA's comment will be summarized and excerpted, where possible.

No comments were received by EPA during the public comment period.

Iowa Chapter of Sierra Club (Sierra Club)

This document addresses Sierra Club's comments in their May 9, 2007 letter to the Department. The organization of these comments will be the same as used by Sierra Club. Sierra Club's comment will be summarized and excerpted, where possible. The Department's response will follow under the heading "**Response:**".

Section I: Introduction

Comment: According to state and federal clean air laws, MidAmerican Energy Company's ("MidAmerican"s) proposed Council Bluffs Energy Center Unit 4 Boiler constitutes one or more major modifications to Council Bluffs Energy Center, an existing major stationary source of air pollution for: particulate matter/particulate matter under 10 microns in diameter ("PM10"); ozone precursors (volatile organic compounds ("VOCs") and nitrogen oxides ("NOx")); carbon monoxide, NOx, sulfur dioxide ("SO2"); sulfuric acid mist ("SAM"); lead and mercury. The plant currently consists of three (3) coal-fired electrical generation units with a combined capacity of 821 megawatts ("MW"). The new unit is a nominal 790 MW coal-fired supercritical pulverized coal fired boiler with associated emergency generator, cooling tower, auxiliary boiler, and shared coal, lime and ash handling equipment. MidAmerican is the named owner and operator of all four units.

As part of this permit application, MidAmerican has requested the removal of § 112(g) limits in the main boiler permit. Section 112(g) of the Clean Air Act requires the U.S. Environmental Protection Agency to regulate major industrial facilities that emit one or more of 188 listed hazardous air pollutants (air toxics). Air toxics are those pollutants that are known or suspected of causing cancer or other serious health effects, such as developmental effects or birth defects. On July 16, 1992, EPA published a list of industrial source categories that emit one or more of these hazardous air pollutants. EPA was required to develop standards for listed industrial categories of “major” sources (those that have the potential to emit 10 tons/year or more of a listed pollutant or 25 tons/year or more of a combination of pollutants) that would require the application of stringent controls, known as maximum achievable control technology (MACT). Under the terms of the original CBEC4 PSD Permits, lowans would have benefited from this increased protection against toxic mercury. Now, under the Bush administration’s Clean Air Mercury Rule, MidAmerican can emit more mercury than anticipated for many years to come and save money on control technology. MidAmerican is requesting that the new PSD Permits for CBEC4 use this new, looser limit on toxic mercury emissions.

MidAmerican has also requested new PSD Permits and changes in the existing Permits for CBEC4. In June of 2003, the Iowa Department of Natural Resources (“IDNR”) issued Prevention of Significant Deterioration Construction Permits (“PSD Permits”) to MidAmerican for construction of a fourth coal-fired boiler at CBEC (“CBEC4”). These permits required that MidAmerican construct the new boiler and associated emission sources in strict compliance with the terms of the permits. MidAmerican did not do so. Instead, MidAmerican built eleven (11) new emission sources as part of its CBEC4 project without applying for the required PSD Permits. In spite of DNR’s orders not to start up these unpermitted emission sources, MidAmerican has already started up six (6) of these unpermitted units, some as early as September of 2006. MidAmerican also constructed thirteen (13) new emission sources not in compliance with the explicit technical specifications of the relevant PSD Permits, and started up twelve (12) of the thirteen. MidAmerican is therefore in ongoing violation of state and federal law requiring full compliance with PSD Permits for all new construction at a major source. Iowa law forbids issuance of “a construction permit or conditional permit which results in an increase in emissions ... to any facility which is in violation of any condition found in a permit involving PSD, NSPS, NESHAP or a provision of the Iowa state implementation plan.” 567 IAC 22.3(1).

It is in this posture – requesting looser limits on toxic emissions and in ongoing violation of state and federal law – that MidAmerican comes to the State of Iowa to request new PSD Permits for CBEC4, issuance of which would be in direct violation of the prohibition at 567 IAC 22.3(1). Commenters request a public hearing at which CBEC’s neighbors and other concerned citizens may participate more fully in the review of this troubling application.

Response: Each of the issues raised in this section (Mercury, issuance of the permits, and public hearing request) will be discussed in more detail in later sections of this document. Mercury will be discussed in Section III. Issuance of the permits will be discussed in Sections II and IV, and the public hearing request will also be discussed in Section IV (Conclusion).

Section II

Comment: The explicit terms of the original PSD Permits for CBEC4, issued in 2003, laid the following conditions on the permits:

The owner or operator of the facility shall assure that the installation, operation, and maintenance of this equipment is in compliance with all of the following conditions. This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant shall cause this permit to be void. In addition, the applicant may be subject to criminal penalties according to Iowa Code Section 455B.146A.

Clean Air Act § 165, 42 U.S.C. § 7475, also requires that each new major stationary source receive a permit prior to beginning construction. This requirement is repeated in the regulations implementing the Clean Air Act's Prevention of Significant Deterioration program and the Iowa legislature has enacted these requirements into Iowa law. CBEC meets the statutory definition of a major stationary source because it is a fossil fuel-fired steam electric plant with more than 250 million British thermal units (MMBTU) per hour of heat input and is therefore subject to Prevention of Significant Deterioration permitting requirements. In constructing unpermitted emission sources and altering the specifications of new emission sources without obtaining PSD Permit amendments, MidAmerican has misrepresented its installation and operation activities and voided its existing PSD Permits. The application for new and modified PSD Permits for CBEC4 – including a request to apply a newer and less protective mercury standard – should therefore be considered a new application with all the associated requirements.

For this reason, Sierra Club has expanded its comments on this Draft Permit to matters beyond the scope of the changes from the original CBEC4 PSD Permits. These comments do not represent the whole of Sierra Club's concerns over this major new source of air pollutants, water contaminants, and global warming gases. These concerns could only be expressed fully in the context of a PSD permitting process that evaluates the whole of the new emission sources at CBEC, as required by the Clean Air Act. This attenuated permit modification process does not fulfill the requirements of the law. Moreover, even if the applicant had not voided its own permit through misrepresentations, the proposed action by IDNR, to permit new emission sources, constitutes a major modification and must be subject to PSD review for the modified and new sources (i.e., the 11 previously-unpermitted emission sources).

Response: The conditions of the permit cited above are from two (2) separate portions of the standard conditions of the permit. The first sentence

“The owner or operator of the facility shall assure that the installation, operation, and maintenance of this equipment is in compliance with all of the following conditions.”

is from the introductory paragraph to all of the permit conditions (located on the second page just under the title “PERMIT CONDITIONS”). The next three (3) sentences

“This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant shall cause this

permit to be void. In addition, the applicant may be subject to criminal penalties according to Iowa Code Section 455B.146A.”

make up the first paragraph under Permit Condition 1 (Departmental Review). The Sierra Club requests of more broad interpretation of the meaning of this condition than is used by the Department.

By definition the word “misrepresent” means “to give a false or misleading representation of usually with an intent to deceive or be unfair.” (See Webster’s Ninth New Collegiate Dictionary).

The Department does not believe the facility intentionally gave the Department incorrect stack parameters (i.e. stack height, stack orientation, stack diameter, etc.) or wrong capacities of emission units it’s original permit applications.

The Department does not agree with the Sierra Club and does not consider the permits to be void, and is working towards the issuance of amended construction permits. The comment period is open only to those items that are being added or modified (i.e. stack parameters, removal of HAP limits, “as-built” units, etc.), and does not apply to prior permitting not under notice.

The Department has issued a Notice of Violation (NOV) and is in the process of referring MidAmerican to the Attorney General for:

- 1) failure to timely obtain PSD construction permits for eleven (11) emission points,
- 2) failure to construct and operate equipment in compliance with its applications and with thirteen (13) construction permits issued based upon those applications, and
- 3) failure to timely obtain amended construction permits for the thirteen (13) emission points prior to installation and operation, as required.

MidAmerican did not avoid any requirements of the Prevention of Significant Deterioration (PSD) program for those “as-built” units as the units were required to install the Best Available Control Technology (BACT), conduct dispersion modeling, review other impacts, etc. since those units are considered part of the original PSD project.

Section III

Comment: Congress intended to ensure that major sources of air pollution like CBEC do not degrade air quality for those forced to live and work in the areas where they are located. Congress recognized that generic national ambient air quality standards (“Air Quality Standards”) do not adequately protect people. Air Quality Standards “do not adequately protect against genetic mutations, birth defects, cancer, or diseases caused by long-term chronic exposures or periodic short-term peak concentrations, and hazards due to derivative pollutants and to cumulative or synergistic impacts of various pollutants; and they do not adequately protect against crop damage and acid rain.” Air Quality Standards also do not prevent the deterioration of otherwise cleaner air regions from deteriorating to the Air Quality Standards “floor.” For these reasons, Congress enacted the Prevention of Significant Deterioration (“PSD”) provisions of the Clean Air Act.

- 1) Mercury Emissions from CBEC4 Will Contaminate the Immediate Vicinity in Western Iowa and Eastern Nebraska.

The 2003 Final PSD Construction Permit for CBEC4 allowed mercury emissions at a rate up to 1.7×10^{-6} lbs/MMBTU, excluding startup, shutdown and malfunction. At this rate, the new unit would emit approximately 114 pounds of mercury – in addition to mercury already emitted by the three existing boilers – into the local environment every year. Under the proposed terms of the new PSD Permits, residents would risk even greater levels of legal mercury contamination with no numeric limits in the Draft Permit. Mercury is a recognized persistent, bioaccumulative toxin. According to a recent study by the U.S. EPA, a majority of this mercury will deposit in the area around the plant. The study demonstrates that local and regional coal-burning sources dominate local wet deposition of mercury. Such mercury enters the food chain and therefore the bodies of humans and livestock. In other words, Iowa and Nebraska residents will be forced to absorb the mercury produced by CBEC4, with known toxic effects. To provide fully enforceable protection for Iowans against deadly mercury contamination of our waters, the PSD Permit should create a numeric mercury emission limit by applying the formulas in the Clean Air Mercury Rule (CAMR) at 40 C.F.R. § 60 Subpart HHHH, enacted into Iowa law at 567 IAC 34.300. Such a limit will ensure that the Activated Carbon Injection technology specified for CBEC4 is operated at its highest efficiency.

Limits associated with CAMR are not protective. In its Final Preamble to CAMR, EPA designated a limit of 0.0103 ng/J (78×10^{-6} lb/MWh) for dry FGD units. This limit allows nearly an order of magnitude more mercury pollution to escape from CBEC4 smokestacks than under the mercury limits in the original CBEC4 PSD Permits. Rather than putting Iowans at risk of this level of pollution, IDNR should enforce the full terms of the original CBEC4 PSD Permits, which remain legally binding documents in spite of MidAmerican's violations. Moreover, there is no legal basis for revoking a § 112(g) limit that was properly determined and imposed at the time that the plant was constructed. Such changes are inappropriate in a PSD Construction Permit amendment.

Response: The reason the 112(g) limits are being removed was detailed in the Technical Support Document and summed up by the following statement:

“Since EPA removed electric utilities from the list under Section 112 that means the 112(g) limits previously established in the CBEC 4 Boiler permit no longer have a legal basis. MidAmerican has requested that the 112(g) limits be removed and since those limits have no legal basis and since the Department cannot be more stringent than an EPA standard (455B.133), the Department has granted MidAmerican's request and has removed all of the 112(g) limits in the CBEC Boiler 4 permit.”

NSPS Subpart HHHH was not designed to establish limits on Hg in individual permits, but rather to establish allowances allowed for units under the cap and trade program. An allowance is different from an emission limit. A company is able to emit over an allowance as long as it has credits to offset the higher actual emissions.

Comment:2) The Draft Permit Does Not Include BACT Limits for PM_{2.5}

CBEC4 is subject to stringent air pollution control requirements under the Clean Air Act's Prevention of Significant Deterioration ("PSD") program, 42 U.S.C. § 7470, et seq. IDNR is charged with implementing the PSD program in Iowa. Therefore, IDNR must ensure that all new and modified emission sources at CBEC are subject to emission limits that are to be based on the "best available control technology" or "BACT" and that the facility does not exceed ambient air quality standards or maximum increase over baseline (i.e., "increment") during worst case conditions. BACT, "one of the most critical elements of the PSD permitting process," is defined as:

an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

To ensure that the limits in the final PSD permit ensure "maximum degree of reduction," based on applicable production processes, fuel cleaning, clean fuels, and other pollution control techniques, the permit applicant is required to propose a permit limit that constitutes BACT and to supply sufficient information on the control option used to achieve that limit. Specifically, the applicant must provide "a detailed description of the system of continuous emissions reduction planned for the source or modification, emission estimates," and any other information necessary to ensure a detailed analysis leading to a limit ensuring maximum achievable pollution reduction. Each step of a BACT analysis, and especially a decision to reject an effective pollution reduction option in favor of a less effective option when establishing a BACT limit "must be adequately explained and justified."

To ensure that the BACT determination is "reasonably moored" to the Clean Air Act's statutory requirement that BACT represent the maximum achievable reduction through the use of various pollution control techniques, U.S. EPA established a top-down analysis process outlined in the NSR Manual. Top-down BACT determination includes the following five steps:

- STEP 1: IDENTIFY ALL POTENTIAL AVAILABLE CONTROL TECHNOLOGIES
- STEP 2: ELIMINATE TECHNICALLY INFEASIBLE OPTIONS
- STEP 3: RANK REMAINING CONTROL TECHNOLOGIES BY CONTROL EFFECTIVENESS
- STEP 4: EVALUATE MOST EFFECTIVE CONTROLS AND DOCUMENT RESULTS.
- STEP 5: SELECT BACT

Iowa's PSD program, which incorporates 40 C.F.R. § 52.21, requires a BACT limit "for each pollutant subject to regulation under the Act that it would have the potential to emit in

significant amounts." PM_{2.5}, or particulate matter 2.5 microns in diameter and smaller, is "a pollutant subject to regulation under the Act" because EPA established an Air Quality Standard for PM_{2.5} in 1997. The Court of Appeals rejected industry's collateral attacks of the PM_{2.5} rule in 2002, upholding the PM_{2.5} Air Quality Standards. Therefore, PM_{2.5} is a "pollutant subject to regulation under the Act."

The proposed modifications to the CBEC permit will increase PM_{2.5} emissions because the 11 new emission sources will result in a "significant" increase (defined as "any emission rate") from the facility. Because PM_{2.5} is a regulated pollutant that will be emitted in a significant amount, and because the proposed permitting action results in a significant increase in PM_{2.5}, a BACT limit for PM_{2.5} is required. The Draft Permit does not include a BACT limit for PM_{2.5} emissions from CBEC4 and therefore fails to comply with the requirement that all regulated pollutants (including PM_{2.5}) be subject to a BACT limit that represents the maximum degree of reduction achievable with available control options. It does not appear that MidAmerican or IDNR considered such a limit. This is unlawful and must be corrected before a PSD Permit can issue.

Response: States are not required to submit an amended State Implementation Plan (SIP) addressing PM_{2.5} for attainment areas until April of 2008.

Comment:

3) Excess Emissions Lack Sufficient Definition Under 567 IAC § 24.1

In light of MidAmerican's history of excessive opacity violations during periods labeled "exempt" in records submitted to IDNR, Commenters request a clearer definition of what constitutes an "expeditious" startup and what is meant by "a manner consistent with good practice for minimizing emissions." EPA's NSR Manual directs permit writers to apply the following conditions to excess emissions:

1. precisely define excess emissions;
2. outline reporting requirements;
3. specify actions the source must take; and
4. indicate time limits for correction by the source.

The last requirement in particular is missing from the Draft Permit. There appears to be no enforceable language in the Draft Permit restricting MidAmerican's application of the startup and shutdown exemption. Given the existing practice of applying the exemption to boiler startup opacity violation periods that last for hours without explanation, the Final Permit requires a more precise definition as to what activities qualify as exempt, and a time limit for startups and shutdowns. In addition, because long periods of opacity violations have the potential to increase particulate matter emissions significantly and those emissions have numerical limits, the Final Permit should require Continuous Emissions Monitoring for PM rather than relying on period stack tests.

The draft permit purports to excuse periods of startup and shutdown from the BACT limits. This is unlawful for four reasons. First, a PSD permit must include stringent requirements to ensure compliance with the Clean Air Act during startup, shutdown and malfunction (SSM). As the Environmental Appeal Board states:

It is well established that BACT requirements cannot be waived or otherwise ignored during periods of startup and shutdowns... [U]nder the PSD program automatic exclusions from otherwise applicable emission limits during SSM events are inappropriate. Indeed, EPA has, since 1977, disallowed automatic or blanket exemptions for excess emissions during startup, shutdown, maintenance, and malfunctions by defining most periods of excess emissions as 'violations' of the applicable emission limitations.

Therefore, exempting startup, shutdown, and malfunction periods entirely violates the Clean Air Act requirement that all periods of operation be subject to BACT. Second, the permit contains no emission limits applicable to the boilers during startup, shutdown or "malfunction." Therefore, the emissions are limited only by the physical limits of the plant (i.e., maximum theoretical emissions). This represents the worst-case scenario for emissions. These uncontrolled emissions must be used to model air impacts. For both Air Quality Standards 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.

Furthermore, according to the Air Quality Modeling Guideline (Appendix W): "At a minimum, the source should be modeled using the design capacity (100 percent load)." BACT limits established in the permit are typically used for modeling, but it is important to use the least stringent limit. This is why many PSD permits – including the draft Desert Rock permit issued by U.S. EPA – contain short term limits in addition to limits with longer averaging times and do not exclude startup, shutdown and malfunction. The draft permit for CBEC4 effectively has no limit on emissions during startup, shutdown and cleaning of control equipment and, therefore, the maximum allowable emissions are equal to the maximum theoretical emissions. The maximum theoretical emission rates must therefore be used to model Air Quality Standards and increment consumption. The permit must either contain short-term emission limits that apply at all times, or the permit must be denied unless and until the applicant demonstrates compliance with Air Quality Standards and increment during worst-case, uncontrolled conditions.

Third, there is no definition of "startup," "shutdown," or "cleaning" in the permit. Therefore, because the permit grants a free pass from all emission limits during these periods, the permit is unenforceable. There is no way to determine whether a startup, shutdown and/or malfunction is occurring. To the extent that a startup, shutdown and malfunction exemption is allowed (which it is not), the permit must define these periods and require monitoring and reporting sufficient to determine if such condition is occurring at any given moment. Fourth, the limits are much too lenient to constitute BACT, especially when periods of startup, shutdown and malfunction are excluded. As noted above, many other permitted facilities have lower emission limits than those proposed for CBEC4. These other facilities do not exclude periods of startup, shutdown, and malfunction from the averaging times. Because emissions can be higher during startup, shutdown and cleaning, including them in the averaging time for a permit limit results in a more stringent limit. The source must achieve lower emissions during all other periods of operation to achieve a permit limit that includes periods of startup, shutdown, and cleaning. The limits being proposed for CBEC4 do not require the maximum degree of reduction during normal operating conditions.

Response: Since the Department is not considering the permits void this comment is outside the scope of the public comment period as it relates to the changes to CBEC4 project. Startup,

shutdown, and malfunction (SSM) emissions are included in the annual (ton/yr) BACT limit. SSM emissions are also included in the limits established to meet the NAAQS (Permit Condition 10c.).

The permit requires that if the company were to have a lengthy startup period emissions would still need to be below the limits listed in the table in Permit Condition 10c. Startup emissions must still meet the annual cap (i.e. the ton/year BACT limit).

The comments also suggest requiring a continuous emission monitoring system (CEM) for particulate matter (PM) rather than relying on stack tests. A PM CEMS would not be a reliable demonstration of compliance with the particulate limits as PM CEMS only measure the filterable portion and do not measure the condensable fraction of PM. Therefore, one would still have to rely on a stack test to determine condensable emissions and make an assumption on what those condensable emissions are in order to actually determine compliance.

Finally, the fact that opacity is over a specific level does not correspond to a violation of the particulate matter standard as opacity is merely an indicator of particulate emissions. In addition, it is only an indicator if the excess opacity is over the same time period as the particulate averaging period. For example, one cannot assume there is violation of a particulate standard with a 3-hr averaging period if the opacity violation occurred over a six (6) minute time period.

Comment:

4) The Sulfuric Acid Mist Limit in the Permit Does Not Represent BACT

Sulfuric acid mist ("SAM") is a regulated pollutant subject to BACT. A small amount of the sulfur content of coal is converted into sulfur trioxide, or SO_3 , in the boiler. The SO_3 is then converted into SAM when it contacts water in the scrubber. This SAM is emitted from the stack as small liquid droplets. The Draft Permit sets a SAM emission limit from Unit 4 at 0.00421 lb/MMBtu. IDNR appears to have settled on a SAM limit that is somewhere in the middle of other permit limits. This is not a top-down BACT analysis and does not satisfy the requirements of the Clean Air Act. Moreover, the proposed limit appears to assume an unsupported conversion rate of SO_2 to SO_3 and does not account for the reductions achievable with the pollution controls proposed for Unit 4. The limit does not represent BACT.

Sierra Club is aware of at least two control options that are applicable and could be installed to lower SAM emissions from Unit 4. First, a lower conversion SCR catalyst could be used, one achieving less than 0.5% SO_2 to SO_3 conversion. This would lower the SAM BACT limit to 0.002 lb/MMBtu, or half that proposed. Second, a wet electrostatic precipitator designed to remove at least 90% of the SAM exiting the dry FGD baghouse could be used. This would lower the SAM BACT limit to 0.0004 lb/MMBtu, or ten times lower than proposed. Other facilities have been permitted with lower SAM limits. The Newmont Mining plant in Nevada has a BACT limit for SAM of 0.001 lb/MMbtu. The Parish Unit 8 facility in Texas has a SAM limit of 0.0015 lb/MMBtu, the Santee Cooper Cross plant has a limit of 0.0014 lb/MMBtu, the SEI Birchwood plant has a limit of 0.002 lb/MMBtu and the AES Puerto Rico facility has a limit of 0.0024 lb/MMBtu. There is no indication that CBEC Unit 4 is substantially different than any of these plants, especially the Newmont Mining plant. Therefore, it must be assumed that BACT for Unit 4 is no greater than 0.001 lb/MMBtu.

Furthermore, an emission rate even lower than 0.001 lb/MMBtu limit can be achieved by either a wet electrostatic precipitator ("wet ESP") or sorbent injection. A BACT analysis must determine the best control option for each pollutant, and must consider higher-ranked, more effective control options like wet ESP and sorbent injection, which are already in use elsewhere and have great potential for lowering SAM emissions at CBEC.

Response: Since the Department is not considering the permits void this comment is outside the scope of the public comment period as it relates to the changes to CBEC4 currently being addressed.

Comment:

5) Lower PM₁₀ Limits are Achievable

The Draft Permit proposes a PM₁₀ limit of 0.025 lb/MMBtu. This does not represent maximum achievable control with a fabric filter baghouse. There have been a number of recent permits with total PM₁₀ limits at and below 0.018 lb/MMBtu. Two examples are the Elm Road Generating Station in Oak Creek, Wisconsin, and the Weston Generating Station Unit 434 in Rothschild, Wisconsin. Both have total PM₁₀ limits of 0.0018 lb/MMBtu. The Elm Road permit also has a total PM (of any diameter) of 0.018 lb/MMBtu, while the Weston Unit 4 permit also has a total PM (of any diameter) limit of 0.02 lb/MMBtu. The J.K. Spruce Plant in Texas has a permit limit for total PM of 0.022 lb/MMBtu based on an annual average. Spruce is a 750-MW pulverized coal-fired boiler that will burn PRB subbituminous coal similar to the fuel planned for CBEC4. The Thoroughbred PSD permit, which was challenged extensively through a contested case hearing covering several months, has a total PM₁₀ limit of 0.018. This facility is a 500-MW supercritical pulverized coal-fired boiler. It will burn a similar PRB subbituminous coal with 0.5 percent sulfur and 5.5 percent ash. The Longview plant, in West Virginia, also has a total PM₁₀ permit limit of 0.018 lb/MMBtu. This facility will burn coal with up to 3.25% sulfur and 25% ash, which will create more PM before controls than CBEC4. These limits are easily achievable. For example, Deseret Generation's Bonanza Power Plant in Utah conducted a stack test for total PM and achieved 0.016 lb/MMBtu.

Response: Since the Department is not considering the permits void this comment is outside the scope of the public comment period as it relates to the changes to CBEC4 currently being addressed. However, a few things need to be clarified based on the above comment:

- The Wisconsin permits (Elm Road and Weston) were both issued after the original MidAmerican permit (1/14/04 for Elm Road and 10/19/04 for Weston).
- While the J.K. Spruce Plant may be permitted at 0.018 lb/MMBTU there are two (2) serious flaws comparing this limit with the limit set for MidAmerican. First, it is an annual average for particulate. As was previously stated PM CEMS do not measure the condensable portion of PM. So this annual average could only be applied to the filterable portion of PM as there is no way to measure total PM over an annual period. Next, an emission limit averaged over an annual period is not as stringent as the Department's 0.025 lb/MMBTU PM₁₀ limit.

- The averaging period for the West Virginia permit is a six (6) hour rolling average. However, since it has a longer averaging time it is not as stringent as the limit established by the Department.
- The Department does not have the information concerning the Deseret Generation's Bonanza Power Plant stack test. However, if the number reported by the commenter is the average of three (3) 1-hr runs that does not correlate into the emission standard easily being met. In fact, the Department would not set an emission standard at the average of three (3) 1-hr stack test runs as that only means the company is in compliance 50% of the time. A more robust method to set a limit based on stack testing is to base it on some sort of statistical assessment such as using the upper bound of a 95% confidence interval.
- Finally, the Thoroughbred project is the only permit that was issued prior to MidAmerican's permit. The ability of the facility to meet the limit has not been demonstrated.

Comment:

6) The Applicant-Developers Did Not Conduct the Required Preconstruction Monitoring.

It does not appear that any preconstruction ambient air monitoring was done prior to startup for the eleven new emission sources proposed for permitting. None was provided in response to Sierra Club's request for all records pertaining to the PSD permit. None was included in the application materials submitted by MidAmerican. Either IDNR failed to make all application materials available for the public, or the application was deficient because no ambient air monitoring was done. As a prerequisite to obtaining a permit to construct, MidAmerican must provide IDNR with data about the background ambient air quality in the area that will be impacted by emissions from the new EGU. Specifically, the applicable requirements 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 any such pollutant for which no National Ambient Air Quality Standard exists, the analysis shall contain such air quality monitoring data as the Administrator determines is necessary to assess ambient air quality for that pollutant in any area that the emissions of that pollutant would affect. With respect to each such pollutant [for which a Air Quality Standards 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.

This requires the applicant 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. To use ambient air monitoring data for a period less than twelve months, IDNR must make an on-the record determination “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)...” 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.” In other words, if fewer than 12 months are used, the time period of data collection should represent the months of maximum ambient air concentration.

An applicant can only avoid collecting site-specific ambient air quality data if valid, sufficient, and representative ambient air quality data exists from regional monitoring stations. This only occurs in very limited circumstances. To be acceptable, such data must be judged by the permitting agency to be representative of the air quality for the area in which the proposed project would construct and operate. Although a State or local agency may have monitored air quality for several years, the data collected by such efforts may not necessarily be adequate for the preconstruction analysis required under PSD. In other words, IDNR must determine that data from regional monitoring stations are representative of ambient air quality at the CBEC site. This requires IDNR to make specific findings on the record. EPA sets forth three criteria for determining when existing ambient monitoring data is sufficient:

- 1) monitor location;
- 2) quality of the data; and
- 3) “currentness” of the data.

These criteria do not support using existing air quality data for the proposed CBEC units.

1) Monitor Location

For a site like CBEC, existing ambient air quality monitoring data can only be used if the existing monitors happen to coincide, exactly, with the areas of highest impact from the new facility, the areas of highest impact from stationary sources in the area, and the areas of highest combined impact from both new and existing sources. This is highly unlikely, especially since IDNR’s existing air quality monitors are nowhere near CBEC. In summary, MidAmerican was required to conduct air quality monitoring for at least twelve months, prior to submitting its PSD permit application to the IDNR. This was not done and, therefore, the air quality determination is deficient and the permit cannot be issued.

2) Data Quality

Moreover, even if IDNR’s distant existing air quality monitors could be used to determine ambient air quality for permitting the modified CBEC4 Unit, the data must meet the same quality standards that on-site monitoring must meet. 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; and
- 4) minimum 80% data recovery.

It is not clear that these data quality requirements were met. Again, even if they were, the monitoring locations must still correspond to the requirements above—including location at the points of maximum impact and maximum ambient air concentration.

3) Data “Currentness”

Additionally, if existing ambient air monitoring data could be used to permit the new units at CBEC4, the data must be current. This means that the data must have been collected in the most recent three years (2004-2007). It does not appear that this requirement was met. Moreover, using non site-specific air monitor data, from existing IDNR sampling sites, violates the Clean Air Act. The plain language of the Clean Air Act requires site-specific air quality monitoring for every PSD permit application. Specifically, the plain language of the Clean Air Act requires that ambient air quality data be collected at and around the site of the new source, and be collected specifically for the purpose of determining whether the source will cause a violation of Air Quality Standards or increment. The Act does not contemplate using ambient air monitoring from a location nearly 20 km away as a surrogate. The Act’s legislative history further indicates that actual, site-specific ambient air quality should be measured at the permittee’s site.

Response: The CBEC power plant is located southeast of Omaha-Council Bluffs area. Existing ambient air monitoring sites that have gathered PM₁₀ data in Omaha-Council Bluffs area since 2004 are:

Franklin School (AQS ID 19-155-0009) in Council Bluffs (about 10 km from the CBEC site),
19th and Burt (31-055-0054) in Omaha (about 13 km from the CBEC site),
46th and Farnam (31-055-0045) in Omaha (about 15 km from the CBEC site),
7717 Dodge (31-055-0040) in Omaha (about 19 km from the CBEC site),
132nd and Q (31-055-0044) in Omaha (about 24 km from the CBEC site)

No exceedances of the PM₁₀ NAAQS have been recorded at these locations from 2004 to the present.

MidAmerican conducted pre-construction monitoring for PM₁₀ on the north fence line of their CBEC facility as directed by the department. MidAmerican property between the industrial facility and monitoring location is undeveloped and used to grow crops.

- PM₁₀ Monitoring data were collected from 3/18/04 to 3/31/06, using a continuous PM₁₀ sampler (Met One BAM).
- Monitoring data were reported to the public by the department by loading the data EPA’s AQS system (CBEC has AQS Site ID 19-155-0010). The data were loaded in quarterly installments as they became available from MidAmerican.¹

¹ Data from EPA’s AQS system are available online at: <http://www.epa.gov/air/data> .

- An exceedance of the 24 hr PM₁₀ NAAQS (170 ug/m³) was recorded at the CBEC monitoring site on 4/18/04. (The 24 hour PM₁₀ NAAQS is 150 ug/m³)
 - High southerly winds associated with a regional thunderstorm moved through Nebraska and western Iowa during the exceedance day.²
 - PM₁₀ monitors operating on 4/18/04 in Omaha Nebraska (31-055-0054) and Sioux City Iowa (19-193-0017) recorded their highest values for the year (79 ug/m³ and 131 ug/m³, respectively), but did not exceed the NAAQS.
 - On 4/18/04, a PM₁₀ monitor at a background location at Emmetsburg in Northwest Iowa (19-147-1002) recorded an exceedance of the NAAQS (158 ug/m³). Like the CBEC monitoring site, this site has a farm field located to the south of the monitoring location. An exceedance at a background PM₁₀ site in Iowa is a rare occurrence. In the 10 year period from 1996 to 2006, the exceedance recorded at Emmetsburg on 4/18/04 was the only occasion when a PM₁₀ exceedance was monitored at a location in Iowa that was not located on an industrial fence line.
 - MidAmerican observed that tilling was being performed in fields around CBEC the day before and on the day of the exceedance, and flagged the data in AQS for exclusion due to agricultural tilling.
 - MidAmerican investigated the possibility of performing a chemical analysis to establish the composition of the particulate collected on the exceedance day in support of their proposed agricultural tilling exclusion. After dialog with the instrument vendor (Met One) and a particulate analysis laboratory (Research Triangle Institute), MidAmerican determined that this analysis was not feasible. MidAmerican agreed to extend the monitoring period by one year to provide additional data on PM₁₀ concentrations near CBEC.
- No additional PM₁₀ NAAQS exceedances were monitored at the CBEC site during the preconstruction monitoring period.
- Additional information on the CBEC preconstruction monitoring project is available in the Air Quality Bureau Records Center.

² Web links concerning high winds and dust in the Great Plains and Midwest on April 18, 2004:

Archived meteorology from UNL:

<http://www.hprcc.unl.edu/nebraska/april18-2004storms.html>

Satellite photos:

http://www.crh.noaa.gov/gid/Web_Stories/2004/weather/04-18/strongwinds.php

http://www.osei.noaa.gov/Events/Dust/US_Plains/2004/DST2usPL109_N6.jpg

http://earthobservatory.nasa.gov/NaturalHazards/natural_hazards_v2.php?img_id=12078

Storm damage reports:

http://www.spc.noaa.gov/climo/reports/040418_rpts.html

Photos of dust in Lincoln Nebraska:

<http://snrs.unl.edu/amet898/turcotte/secondary/2004/storm04182004.htm>

Section IV: Conclusion

Comment: For the foregoing reasons, Sierra Club respectfully requests a public hearing on the issuance of a new PSD Construction Permit for CBEC4, and also requests that IDNR order MidAmerican Energy Company to cease and desist operations of all emission sources covered by this draft permit until such time as a new PSD permitting process for all CBEC4 emission sources can be completed in full compliance with applicable law.

Response: 567 IAC 22.3(1) states:

“In no case shall a construction permit or conditional permit which results in an increase in emissions be issued to any facility which is in violation of any condition found in a permit involving PSD, NSPS, NESHAP or a provision of the Iowa state implementation plan. **If the facility is in compliance with a schedule for correcting the violation and that schedule is contained in an order or permit condition, the department may consider issuance of a construction permit...**” (emphasis added).

The October 2006 application is considered the company’s compliance plan and the issuance of the draft permits would end the violation. Therefore, the Department is not requiring MidAmerican to stop operations of all emission units associated with this project.

The Department is not granting the request for a public hearing for the following reasons:

- 1) The request was not made prior to the April 23, 2007 date listed in the public notice,
- 2) The Department set a public hearing date for each initial PSD project, but this is not an initial project. Therefore, DNR would hold a public hearing only upon receiving a timely request, and
- 3) None of the comments made during the public comment period have led to substantial changes to the permits.

No other comments were received.
