

DRAFT

AIR EMISSION PERMIT NO. 06100004-007

Major Amendment

IS ISSUED TO

ALLETE Inc. d/b/a Minnesota Power Inc.

Wisconsin Public Power Inc. Energy

MINNESOTA POWER INC - BOSWELL ENERGY CENTER

1210 Northwest 3rd Street

Cohasset, Itasca County, Minnesota 55721

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the Permit Applications Table.

This permit amendment supersedes Air Emission Permit No. 06100004-006 and authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such as are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: Federal; Pt. 70/Major Facility for NSR/Non-Major Modification for NSR

Operating Permit Issue Date: 03/28/2007

Major Amendment Issue Date: <issue date>

Expiration Date: 03/28/2012* – Title I Conditions do not expire.

* The Permittee may continue to operate this facility after the expiration date of the permit, per the provision under Minn. R. 7007.0450, subp. 3 (Title V Reissuance Application was received 09/29/2011).

DRAFT

Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for John Linc Stine
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit - Reissuance	September 24, 2001	003
Major Amendment	June 26, 2008	004
Major Amendment	September 15, 2008	004
Major Amendment	December 3, 2008	004
Major Amendment	September 5, 2008	004
Reopening	January 22, 2009	004
Reopening	October 9, 2008	004
Reopening	June 5, 2008	004
Major Amendment	February 5, 2010	005
Major Amendment	October 15, 2010; February 25, 2011 supplement	006
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- B-1. Dispersion Modeling Parameters From Permit No. 06100004-004**
- B-2. Dispersion Modeling Parameters For BEC4 CO Emissions**
- C. Acid Rain Program Forms and Requirements**

NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

The Boswell Energy Center (facility) is a coal-fired electric utility steam generating plant. Emission units at the facility include four power boilers, emergency engine generators, and fuel, additive and ash handling equipment. The main fuel for all boilers is sub-bituminous coal. They may also burn pipeline natural gas, distillate oil, propane, limited amounts of boiler cleaning agents, used oil, oily coal, oily paper-based floor dry, wastewater treatment plant sludge, and oily materials (earth substrate with petroleum product).

Units 1 and 2 emissions are controlled by baghouses, over-fire air, and selective non-catalytic reduction. Unit 3 emissions are controlled by Low Nitrogen Oxide Burners (LNB), over-fire air, selective catalytic reduction, a baghouse filter, activated carbon injection (mercury removal additive), and wet flue gas desulfurization. Unit 4 emissions are controlled by a wet venturi scrubber/electrostatic precipitator, selective non-catalytic reduction, LNB, separated over-fire air, and a sulfur dioxide spray tower scrubber.

The facility also contains various support equipment such as coal handling and storage equipment, emission control additive storage and handling equipment, wet and dry fly ash handling and storage equipment, and emergency generators.

AMENDMENTS DESCRIPTION:**ACTION 004**

Permit 004 authorized installation of natural gas fired igniters/heat guns on all four boilers, revised the size of emergency generator (EU 023) from 100 kW to 300 kW, and included installation of new Continuous Emissions Monitoring Systems (CEMS).

ACTION 005

Permit 005 authorized installation of low NO_x burners and separated over-fire air in boiler No. 4, and updated changes to Unit 4 continuous emission monitors.

ACTION 006

Permit 006 incorporated the revised PM/PM₁₀ compliance assurance monitoring (CAM) plan for Unit 3 (EU 003); added deadlines for future EU 003 PM, PM₁₀, lead, and hydrogen fluoride emissions testing; clarified the purpose of the continuous opacity monitor in the existing particulate matter CAM plans for Units 1, 2, and 4; and removed completed requirements triggered by recent permit actions (Boiler #3 PM/PM₁₀ CAM plan submittal and Unit 4 startup notification requirement after completion of modifications authorized by permit No. 06100004-005).

ACTION 007

Permit 007 is a major amendment that authorizes a multi-pollutant Unit 4 air pollution control equipment retrofit project to reduce mercury, particulate matter, SO₂, and hazardous air pollutants. The project includes a new semi-dry flue gas desulfurization system ("FGD") and fabric filter baghouse for SO₂ and particulate matter removal. The FGD and fabric filter baghouse are integrated into one control device (CE 030). A powder activated carbon injection system (CE 031) for mercury removal will also be installed. Lastly, new dry ash handling and transport infrastructure will be constructed to convey waste product generated from the FGD/fabric filter process to onsite storage and disposal.

This project includes new emission sources (silos, dust collectors and bin vents) and increases utilization of existing vehicle traffic and ash storage fugitive emissions sources. However, New Source Review, environmental review, and modeling requirements are not triggered. The Unit 4 existing venturi scrubber, electrostatic precipitator, and spray tower pollution control equipment (CE 004, CE 005, and CE 006, respectively) will be retired after completion of the project.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
<p>40 CFR Part 63, Subpart UUUUU National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units:</p> <p>EU 001, EU 002, EU 003, and EU 004 are coal-fired electric utility steam generating units in the 'units designed for coal > 8,300 Btu/lb' subcategory as defined at 40 CFR Section 63.10042 that comprise an existing affected source under 40 CFR Section 63.9982(a)(1).</p> <p>The Permittee shall meet the pt. 63, subp. UUUUU requirements for EU 001, EU 002, and EU 003 no later than April 16, 2015. The Permittee shall meet the pt. 63, subp. UUUUU requirements for EU 004 by April 16, 2016 for EU 004 as authorized in the January 28, 2013 compliance date extension approval letter issued to the Permittee by the MPCA.</p>	<p>40 CFR Sections 63.9982(a)(1), 63.9984(b), & 63.10042</p>
<p>The Permittee must comply with the emission limitations, work practice standards, and operating limits in 40 CFR Section 63.9991 and that are applicable to existing coal-fired unit not low rank virgin coal as defined in Section 63.10042.</p> <p>The Permittee must comply with the general requirements and deadlines in 40 CFR Section 63.10000 and that are applicable to existing coal-fired unit not low rank virgin coal.</p> <p>The Permittee must comply with the initial compliance requirements and deadlines in 40 CFR Sections 63.9984(f) and 63.10005 and that are applicable to existing coal-fired unit not low rank virgin coal.</p> <p>The Permittee must comply with the subsequent performance tests or tune-ups and deadlines in 40 CFR Section 63.10006 and that are applicable to existing coal-fired unit not low rank virgin coal.</p>	<p>40 CFR Sections 63.9984(f), 63.9991, 63.10000, 63.10005, & 63.10006</p>
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr
<p>These requirements apply if a reasonable possibility (RP) as defined in 40 CFR Section 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of Section 52.21(r)(6)(vi)(b).</p> <p>Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500.</p>	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2</p>
<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> 1. Project description 2. Identification of any emission unit (EU) whose emissions of an NSR pollutant could be affected 3. Pre-change potential emissions of any affected existing EU, and the projected post-change potential emissions of any affected existing or new EU. 4. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the EU could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. <p>The Permittee shall maintain records of this documentation.</p>	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.1200, subp. 4; Minn. R. 7007.0800, subps. 4 & 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5
Before beginning actual construction of any project which includes any electric utility steam generating unit (EUSGU), the Permittee shall submit a copy of the preconstruction documentation (items 1-4 under Preconstruction Documentation, above) to the Agency.	Title I Condition: 40 CFR Section 52.21(r)(6)(ii) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
For any project which includes any EUSGU, the Permittee must submit an annual report to the Agency, within 60 days after the end of the calendar year. The report shall contain: a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The quantified annual emissions analyzed using the ATPA test, plus the potential emissions associated with the same project analyzed as part of a hybrid test. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection, if that is the case.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
For any project which does not include any EUSGU, the Permittee must submit a report to the Agency if the annual summed (actual, plus potential used in hybrid test) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain: a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The annual emissions (actual, plus potential if any part of the project was analyzed using the hybrid test) for each pollutant for which the preconstruction projection and significant emissions rate is exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
OPERATIONAL REQUIREMENTS	hdr
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices A and C. Notwithstanding the previous paragraph, modeling parameters in Appendices B-1 and B-2 are included for reference only and compliance with these parameters is achieved through meeting the requirement(s) under the header 'DISPERSION MODELING REQUIREMENTS' listed on pages A-4 and A-5 in the total facility section of table A of this permit.	Minn. R. 7007.0800, subp. 2
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Comply with Fugitive Emissions Control Plan: Follow the actions and record keeping specified in the control plan. The plan may be amended with the Commissioner's approval. If the Commissioner determines that you are out of compliance with Minn. R. 7011.0150 or the control plan, then you may be required to amend the control plan and/or install and operate particulate matter ambient monitors.	Title I Condition: to avoid major modification for PM, PM10, and PM2.5 under 40 CFR Section 52.21 from EU 004 control equipment retrofit; Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0150; Minn. R. 7009.0020
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state requirement only and is not federally enforceable.	Minn. R. 7030.0010-7030.0080
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location. The Permittee may require that MPCA inspectors be accompanied by MP staff during the inspection. Permittee's staff shall be available whenever the plant is operating.	Minn. R. 7007.0800, subp. 9(A)
Comply with general conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Oily Floor Dry: Limit combustion to: 1) cellulose based only, 2) 25 tons per year, and 3) 1.25 tons per hour.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The following does not apply to Boilers No. 001, 002, 003, and 004. These units contain specific operating and/or production limits requirements. Operating and/or production limits will be placed on emission units based on operating conditions during compliance testing. Limits set as a result of a compliance test (conducted before or after permit issuance) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025.	Minn. R. 7017.2025
PERFORMANCE TESTING	hdr
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. These records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
REPORTING	hdr
Application for Permit Amendment: If you need a permit amendment, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000 subp. 1
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Shutdown and Breakdown Reporting Requirement for the Dust Collector Systems for Material Handling Equipment: Shutdowns and breakdowns shall be reported on a quarterly basis to the Agency. The quarterly report shall include an identification of the dust collector that broke down or was shutdown, the time and reason for the breakdown or shutdown, a description of any repairs made, and the date and time the dust collector was placed back in service.	Minn. R. 7019.1000, subp. 2
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Extension Requests: The permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
ACID RAIN PROGRAM REQUIREMENTS	hdr
Emissions from the stationary source cannot exceed any allowances that the source lawfully holds under federal acid rain regulations, except as allowed by Minn. R. 7007.0800, subp. 7.	Minn. R. 7007.0800, subp. 7
Acid Rain Certification Report: due 60 days after end of each calendar year.	40 CFR Section 72.90(b) and 40 CFR Section 72.90(c)
If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR Section 72.9(e).	40 CFR Section 72.9(e)
Keep the certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications and related submissions and all records made or required under the Acid Rain Program on site for a period of 5 years from the date the document was created.	40 CFR Section 72.9(f)
Hold allowances as of the allowance transfer deadline, in the facility's compliance account. Allowances may not be less than the total annual emissions of sulfur dioxide from the previous calendar year from the facility.	40 CFR Section 72.9(c)
DISPERSION MODELING REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Sec. 116.07, subds. 4a and 9; Minn. R. 7007.0100, subps. 7A, 7L and 7M; Minn. R. 7007.0800, subps. 1, 2, and 4; Minn. R. 7009.0010-7009.0080
The parameters used in SO ₂ and PM ₁₀ modeling for permit No. 06100004-004 are listed in Appendix B-1 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2
The parameters used in CO modeling for permit No. 06100004-005 are listed in Appendix B-2 of this permit and for CO modeling for permit No. 06100004-004 are listed in Appendix B-1 of this permit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2
The parameters used in NO _x modeling for permit No. 06100004-004 are listed in Appendix B-1 of this permit. NO _x Modeling Triggers: For changes that do not require a permit amendment or that require a minor permit amendment, and that affect any modeled parameter or emission rate, a Remodeling Submittal requirement is not triggered. The Permittee shall keep updated records on site of all parameters and emission rates. The Permittee shall submit any changes to parameters and emission rates with the next required remodeling submittal. For changes that require a moderate or major permit amendment and affect any modeled parameter or increase in an emission rate, a Remodeling Submittal requirement is triggered. The Permittee shall include previously made changes to parameters and emission rates that did not trigger a remodeling submittal with this modeling submittal.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2
NO _x Remodeling Submittal: The Permittee must submit to the Commissioner for approval changes meeting the above criteria and must wait for a written approval (in the form of an issued permit amendment) before making such changes. The information submitted must include, for stack and vent sources, source emission rate, location, height, diameters, exit velocity, exit temperature, discharge direction, use of rain caps or rain hats, and, if applicable, locations and dimensions of nearby buildings. For non-stack/vent sources, this includes the source emission rate, location, size and shape, release height, and, if applicable, any emissions rate scalars, and the initial lateral dimensions and initial vertical dimensions and adjacent building heights. (continued)	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2
NO _x Remodeling Submittal (continued): The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the latest dispersion characteristics modeled. The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must submit full remodeling.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2
OIL & NATURAL GAS CARBON MONOXIDE LIMIT	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

<p>Carbon Monoxide: less than or equal to 319 tons/year using 12-month Rolling Sum . This limit was taken to avoid an Air Emissions Increase Analysis when installing natural gas ignitor/heat guns. This limit is derived to limit the potential to emit increase to 95 tons/yr of CO.</p> <p>Combined CO emissions from oil and natural gas combustion used in all igniters and warm-up guns in EU 001, EU 002, EU 003, and EU 004 shall not exceed 319 tons per year of CO. This excludes CO emissions from coal combustion and other permitted fuels. This limit applies on a 12-month rolling sum basis and must be evaluated monthly. The following emission factors shall be used: Fuel Oil - 5 lbs CO/1000 gallons; Natural Gas - 84 lbs CO/million cubic feet.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Recordkeeping: by the last day of each month calculate and record the CO emissions for the previous month and the previous 12-month period (12-month rolling sum) from the combustion of natural gas and fuel oil in the boilers ignitor guns.</p>	<p>Minn. R. 7007.0800, subp. 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: GP 002 Opacity Monitors**Associated Items:** MR 020 Blr 1 Opacity

MR 021 Blr 2 Opacity

MR 027 Blr 3 Opacity

MR 040 Blr 4 Opacity

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (Additional requirements are located under the associated MR subject items and in Table B)	hdr
All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data for each successive 6-minute period.	Minn. R. 7017.1200, subp. 1, 2 & 3; 40 CFR Section 60.13(e)(1); 40 CFR Section 60.13(h)
Continuous Operation: COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	Minn. R. 7017.1090, subp. 1; 40 CFR Section 60.13(e)
COMS QA/QC: The owner or operator of an affected facility is subject to the performance specifications listed in 40 CFR pt. 60, Appendix B and shall operate, calibrate, and maintain each COMS according to the QA/QC procedures in Minn. R. 7017.1210.	40 CFR Section 60.13(a); Minn. R. 7017.1210
COMS Daily Calibration Drift Check: The Permittee must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. The acceptable range is as defined in 40 CFR pt. 60, Appendix B, PS-1. The optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition as specified in 40 CFR 60.13(d)(2).	Minn. R. 7017.1210, subp. 2; 40 CFR Section 60.13(d)(I) regarding COMS and 60.13(d)(2)
Attenuator Calibration: The Permittee shall have an independent testing company conduct calibrations of each of the neutral density filters used in the calibration error audit according to the procedure in Code of Federal Regulations, Title 40, Part 60, Appendix B, Section 7.1.3.1 within the time frame of opacity stability guaranteed by the attenuator manufacturer. The manufacturer's guarantee of stability shall be on site available for inspection.	Minn. R. 7017.1210, subp. 4
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-8**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: GP 003 NOx and SO2 Monitors**Associated Items:** MR 028 Blr 1 SO2

MR 029 Blr 1 NOx

MR 032 Blr 2 SO2

MR 033 Blr 2 NOx

MR 036 Blr 3 SO2

MR 037 Blr 3 NOx

MR 042 Blr 4 SO2

MR 043 Blr 4 NOx

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) REQUIREMENTS Additional requirements are located under the associated MR subject items and in Table B	hdr
CEMS QA/QC: The owner or operator of an affected facility shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 75, appendix B as amended.	40 CFR Section 75.21
Daily Calibration error (CE) Test: conduct daily CE testing on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, appendix B.	40 CFR pt. 75, Appendix B, section 2.1
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; and 40 CFR pt. 75, subp. F
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	40 CFR Section 60.13(e); Minn. R. 7017.1090
SO2 Monitoring: Use MR 028, MR 032, MR 036, and MR 042 to continuously monitor SO2 emissions from EU 001, EU 002, EU 003, and EU 004, respectively. NOx Monitoring: Use MR 029, MR 033, MR 037, and MR 043 to continuously monitor NOx emissions from EU 001, EU 002, EU 003, and EU 004, respectively.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: GP 004 Boilers 1-4 Sulfur Dioxide Limits**Associated Items:** EU 001 Power Boiler 1

EU 002 Power Boiler 2

EU 003 Power Boiler 3

EU 004 Power Boiler 4

What to do	Why to do it
BOILER 3 AND 4 COMBINED LIMITS	hdr
When EU 001 and EU 002 are not operating, sulfur dioxide emissions are limited to less than or equal to the following: Condition 1) 3.52 lb/mmBtu for SV 003 and 1.2 lb/mmBtu for SV 004, both on a one-hour average; OR, Condition 2) 4.0 lb/mmBtu for SV 003 and 0.88 lb/mmBtu for SV 004, both on a one-hour average; OR, Condition 3) 3.67 lb/mmBtu for SV 003 and 1.10 lb/mmBtu for SV 004, both on a one-hour average.	Minn. R. ch. 7009; 40 CFR pt. 50
BOILER 1 EMISSION LIMITS	hdr
When the EU 001 flue gasses are vented through SV 001: Sulfur Dioxide: less than or equal to 1.18 lbs/million BTU heat input using 1 Hour Average	Minn. R. 7009.0020
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input using 1-Hour Average and a 3-Hour Average for solid fuels, and 2.0 lbs/mmBtu when burning liquid fuels. When solid and liquid fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula: $w = [2y + 4z] / (y + z)$ where y is the % heat input from liquid fossil fuel and z is the % heat from solid fuels. This limit applies only when EU001 is vented through SV003.	Minn. R. 7011.0510, subp. 1 Minn. R. 7009
BOILER 2 EMISSION LIMITS	hdr
When the EU 001 flue gasses are vented through SV 001: Sulfur Dioxide: less than or equal to 1.18 lbs/million Btu heat input using 1-Hour Average	Minn. R. 7009.0020
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input using 1-Hour Average and a 3-Hour Average for solid fuels, and 2.0 lbs/mmBtu when burning liquid fuels. When liquid and solid fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula: $w = [2y + 4z] / (y + z)$ where y is the % heat input from liquid fossil fuel and z is the % heat from solid fuels. This limit applies only when EU 002 is vented through SV 003.	Minn. R. 7011.0510, subp. 1 Minn. R. 7009
BOILER 3 LIMITS	hdr
Sulfur Dioxide: less than or equal to 2.97 lbs/million Btu heat input using 1-Hour Average when EU 001 and EU 002 are operating, and the EU 001 and EU 002 emissions are vented through SV 001.	Minn. R. 7009.0020
Sulfur Dioxide: less than or equal to 0.09 lbs/million Btu heat input based on a 30-day rolling average. This limit does not apply during times of startup, shutdown or malfunction. (Boiler 3 limit). This limit applies regardless of the operation and venting of the other boilers.	Minn. R. 7007.0800, subp. 2
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input using 1-Hour Average and a 3-Hour Average for solid fuels, and 2.0 lbs/mmBtu when burning liquid fuels. When solid and liquid fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula: $w = [2y + 4z] / (y + z)$ where y is the % heat input from liquid fossil fuel and z is the % heat from solid fuels. The EU 003 sulfur dioxide limit applies regardless if EU001 and EU002 are operating.	Minn. R. 7011.0510, subp. 1; Minn. R. ch. 7009
BOILER 4 EMISSION LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 1-Hour Average period for solid fossil fuel, and 0.8 lb/million BTU using 1 Hour Average period for liquid fossil fuel. When solid and liquid fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula: $w = [0.8y + 1.2z] / (y + z)$ where y is the % heat input from liquid fossil fuel and z is the % heat from solid fuels.	Title I Condition: 40 CFR Section 52.21(j) PSD BACT limit and ambient impacts analysis; 40 CFR Section 60.43

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Sulfur Dioxide: less than or equal to 0.33 lbs/million Btu heat input based on an annual average.	Minn. R. 7021.0050, subp. 5
Sulfur Dioxide: less than or equal to 0.030 lbs/million Btu heat input using 365-day Rolling Average effective 270 days after completion of the first initial performance test of EU 004 (for PM, PM10, PM2.5, or fluorides) after CE 030 and CE 031 installation. 'Day' is a 'boiler operating day as defined at 40 CFR Section 63.10042.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: GP 005 Low Temperature Fabric Filters Requirements

Associated Items:

CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 013 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 032 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 033 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 034 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 035 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 036 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 037 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 038 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 039 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 040 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 044 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
<p>CONTROL EQUIPMENT - EMISSION UNIT CROSS REFERENCE</p> <p>CE 007 - EU 011 Coal Handling-Crusher Building</p> <p>CE 008 - EU 012 Coal Handling-Crusher & Sampler House</p> <p>CE 009 - EU 013 Fly Ash - #1&2 Storage Silo</p> <p>CE 010 - EU 014 Fly Ash - #1&2 Ash Hoppers</p> <p>CE 013 - EU 015 Hg Additive Handling and Storage</p> <p>CE 015 - EU 017 Fly Ash Storage Silo A - Bin Vent & EU 018 Fly Ash Loadout A - Truck Bay</p> <p>CE 016 - EU 019 Limestone Storage - Bin Vent</p> <p>CE 017 - EU 020 Limestone Day Bin 1</p> <p>CE 018 - EU 021 Limestone Day Bin 2</p> <p>CE 032 - EU 024 Limestone Storage - Bin Vent</p> <p>CE 033 - EU 025 Lime Day Bin A - Bin Vent</p> <p>CE 034 - EU 026 Lime Day Bin B - Bin Vent</p> <p>CE 035 - EU 027 Lime Day Bin C - Bin Vent</p> <p>CE 036 - EU 028 Lime Day Bin D - Bin Vent</p> <p>CE 037 - EU 029 Lime Day Bin E - Bin Vent</p> <p>CE 038 - EU 030 Activated Carbon Storage Silo - Bin Vent</p> <p>CE 039 - EU 031 Fly Ash Storage Silo B - Bin Vent</p> <p>CE 040 - EU 032 Fly Ash Loadout B - Truck Bay</p> <p>CE 044 - EU 018 Fly Ash Loadout A - Truck Bay</p>	hdr
CONTROL EFFICIENCY REQUIREMENTS	hdr
The Permittee shall operate and maintain CE 007, CE 008, and CE 009, and CE 010 so that each filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 013, CE 016, CE 017, and CE 018 so that each filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 013, CE 016, CE 017, and CE 018 so that each filter achieves an overall control efficiency for PM < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

The Permittee shall operate and maintain CE 015 so that the filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 79 percent control efficiency	Minn. R. 7011.0070; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 015 so that the filter achieves an overall control efficiency for PM < 10 micron: greater than or equal to 74 percent control efficiency	Minn. R. 7011.0070; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 015 so that the filter achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 43 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 032, CE 033, CE 034, CE 035, CE 036, CE 037, and CE 038 so that each filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99.5 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 032, CE 033, CE 034, CE 035, CE 036, CE 037, and CE 038 so that each filter achieves an overall control efficiency for PM < 10 micron: greater than or equal to 99.5 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 032, CE 033, CE 034, CE 035, CE 036, CE 037, and CE 038 so that each filter achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 99.5 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 039 so the filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99.75 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 039 so the filter achieves an overall control efficiency for PM < 10 micron: greater than or equal to 99.75 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 039 so the filter achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 99.75 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 040 so the filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99.7 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 040 so the filter achieves an overall control efficiency for PM < 10 micron: greater than or equal to 99.7 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 040 so the filter achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 99.7 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 044 so the filter achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 79 percent control efficiency	Minn. R. 7011.0070; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 044 so the filter achieves an overall control efficiency for PM < 10 micron: greater than or equal to 74 percent control efficiency	Minn. R. 7011.0070; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 044 so the filter achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 43 percent control efficiency	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
OPERATING, MONITORING, AND MAINTENANCE REQUIREMENTS	hdr
The Permittee shall operate and maintain CE 007, CE 008, and CE 009, CE 010, and CE 013 at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 015 and CE 044 at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7011.0075

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

The Permittee shall operate and maintain CE 016, CE 017, CE 018, CE 032, CE 033, CE 034, CE 035, CE 036, CE 037, CE 038, CE 039, and CE 040 at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 14
Visible Emissions: The Permittee shall check CE 007 (SV 011), CE 008 (SV 012), and CE 009 (SV 013), CE 010 (SV 014), and CE 013 (SV 015) stacks for any visible emissions once each day of operation during daylight hours.	Minn. R. 7007.0800, subps. 2 and 14
Visible Emissions: The Permittee shall check CE 015 (SV 017) and CE 044 (SV 018) stacks for any visible emissions once each day of operation during daylight hours.	Minn. R. 7011.0080
Visible Emissions: The Permittee shall check CE 016 (SV 019), CE 017 (SV 020), CE 018 (SV 021), CE 032 (SV 024), CE 033 (SV 025), CE 034 (SV 026), CE 035 (SV 027), CE 036 (SV 028), CE 037 (SV 029), CE 038 (SV 030), CE 039 (SV 031), and CE 040 (SV 032) stacks for any visible emissions once each day of operation during daylight hours.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Recordkeeping of Visible Emissions Checks. The Permittee shall record the time and date of each CE 007 (SV 011), CE 008 (SV 012), and CE 009 (SV 013), CE 010 (SV 014), and CE 013 (SV 015) visible emission inspection, and whether or not any visible emissions were observed.	Minn. R. 7007.0800, subps. 4 and 5
Recordkeeping of Visible Emissions Checks. The Permittee shall record the time and date of each CE 015 (SV 017) and CE 044 (SV 018) visible emission inspection, and whether or not any visible emissions were observed.	Minn. R. 7011.0080
Recordkeeping of Visible Emissions Checks. The Permittee shall record the time and date of each CE 016 (SV 019), CE 017 (SV 020), CE 018 (SV 021), CE 032 (SV 024), CE 033 (SV 025), CE 034 (SV 026), CE 035 (SV 027), CE 036 (SV 028), CE 037 (SV 029), CE 038 (SV 030), CE 039 (SV 031), and CE 040 (SV 032) visible emission inspection, and whether or not any visible emissions were observed.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
The Permittee shall operate and maintain each GP 005 fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed from any GP 005 fabric filter; or - any GP 005 fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the GP 005 fabric filter control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5 and 14
Annual Hood Evaluation: For CE 015 and CE 044, the Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. The CE 015 hood evaluation is conducted only for the purposes of determining the capture efficiency of EU 018 emissions captured by the EU 018 loadout annular sleeve (which is vented to EU 017 Fly Ash Storage Silo A - Bin Vent; a totally enclosed process controlled by CE 015). If the Permittee converts Fly Ash Loadout A - Truck Bay (EU 018) to a totally enclosed process, the Permittee is no longer subject to this hood evaluation requirement but shall submit notification of such change prior to the required date of the next hood evaluation.	Minn. R. 7011.0072, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-14**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 001 Power Boiler 1**Associated Items:** CE 001 Fabric Filter - High Temperature, i.e., T>250 Degrees F

CE 023 ROTA-Mix SNCR

CE 025 ROFA

GP 004 Boilers 1-4 Sulfur Dioxide Limits

MR 020 Blr 1 Opacity

MR 028 Blr 1 SO2

MR 029 Blr 1 NOx

MR 030 Blr 1 CO2

MR 031 Blr 1 Air Flow

SV 001 Units 1 & 2 Common bypass stack

SV 003 Units 1, 2, & 3 Common stack

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.1 lbs/million BTU heat input	Title I condition: 40 CFR Section 52.21(k) (ambient air impacts analysis); also meets the requirements of Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity using 6-minute Average except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Comply with the applicable Acid Rain emissions limitation for sulfur dioxide.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9(g)(4)
Refer to GP 004 for sulfur dioxide limits.	hdr
NOx Averaging Plan Maintain an annual average NOx emission rate of 0.46 lbs/MMBtu and limit the annual heat input to less than or equal to 3,500,000 mmBtu per year. OR Maintain a Btu-weighted annual average emission rate in lbs/mmBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the Btu-weighted annual average emission rate averaged over the same units had they each been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are: Plant Boiler ID# Clay Boswell 1, 2, 3, 4 Syl Laskin 1, 2 Taconite Harbor 1, 2, 3	40 CFR Section 76.11 Minn. R. 7011.0553
OPERATIONAL LIMITS AND REQUIREMENTS	hdr
Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, used oil, oily paper-based floor dry, pipeline natural gas, and propane.	Minn. R. 7007.0800, subp. 2
Boiler cleaning agents limited to: EDTA type and Ammonium Bromate, are generated on-site, 5% of total mass input, oxygen limited to 3% or greater, agents may only be burned while the boiler is operating at 75 percent of rated capacity or greater.	Minn. R. 7007.0800, subp. 2
Burn off-specification and on-specification used oil in accordance with Minn. R. ch. 7045, not to exceed 17.5% of rated heat input on an hourly basis (equal to 963 gallons/hr.).	Minn. R. 7007.0800, subp. 2
Vent all emissions to a fabric filter that meets the requirements of CE001 for particulate matter control when burning coal. The fabric filter may be bypassed during startup. Bypassing of the fabric filter shall be for as short a time as is practicable while avoiding damage to the fabric filter and its components, but shall not exceed 8 hours.	Title I Condition: control of particulate emissions.
CONTINUOUS MONITORING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-15**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

The owner or operator shall measure opacity, and all SO ₂ , NO _x , and CO ₂ emissions from affected units in accordance with 40 CFR Section 75.10. See GP002 for requirements regarding opacity monitoring, and GP003 for requirements regarding SO ₂ and NO _x monitoring. The SO ₂ and NO _x monitors shall be capable of producing emission rates in units of lb/mmBtu on a one-hour average, a three-hour average and on a 30-day rolling average.	40 CFR Section 75.10 Minn. R. 7017.1020
Operate and maintain the continuous opacity monitor as a partial indicator of compliance with the PM limit.	40 CFR pt. 64
PERFORMANCE TESTING	hdr
Performance Test: due before end of each 60 months starting 09/16/1997 to determine compliance with the Title I condition particulate matter emission limit. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Title I Condition: monitoring for the particulate matter emission limit set under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1, and 40 CFR pt. 64
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2(A) and 3(B)
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3(B)
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2.
STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing: If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test. If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test. In no case will STET operation be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2.
The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4.

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 002 Power Boiler 2**Associated Items:** CE 002 Fabric Filter - High Temperature, i.e., T>250 Degrees F

CE 024 ROTA-Mix SNCR

CE 026 ROFA

GP 004 Boilers 1-4 Sulfur Dioxide Limits

MR 021 Blr 2 Opacity

MR 032 Blr 2 SO₂MR 033 Blr 2 NO_xMR 034 Blr 2 CO₂

MR 035 Blr 2 Air Flow

SV 001 Units 1 & 2 Common bypass stack

SV 003 Units 1, 2, & 3 Common stack

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.1 lbs/million BTU heat input	Title I condition: 40 CFR Section 52.21(k) (ambient air impacts analysis); also meets the requirements of Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity using 6-minute Average except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Refer to GP 004 for sulfur dioxide limits.	hdr
Comply with the applicable Acid Rain emissions limitation for sulfur dioxide.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9(g)(4)
NO _x Averaging Plan Maintain an annual average NO _x emission rate of 0.46 lbs/MMBtu and limit the annual heat input to less than or equal to 3,500,000 mmBtu per year. OR Maintain a Btu-weighted annual average emission rate in lbs/mmBtu, averaged over the units specified in the NO _x averaging plan, that is less than or equal to the Btu-weighted annual average emission rate averaged over the same units had they each been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are: Plant Boiler ID# Clay Boswell 1, 2, 3, 4 Syl Laskin 1, 2 Taconite Harbor 1, 2, 3	40 CFR Section 76.11 Minn. R. 7011.0553
OPERATIONAL LIMITS AND REQUIREMENTS	hdr
Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, used oil, oily paper-based floor dry, pipeline natural gas, and propane.	Minn. R. 7007.0800, subp. 2
Boiler cleaning agents limited to: EDTA type and Ammonium Bromate, are generated on-site, 5% of total mass input, oxygen limited to 3% or greater, agents may only be burned while the boiler is operating at 75 percent of rated capacity or greater.	Minn. R. 7007.0800, subp. 2
Burn off-specification and on-specification used oil in accordance with Minn. R. ch. 7045, not to exceed 17.5% of rated heat input on an hourly basis (equal to 963 gallons/hr.).	Minn. R. 7007.0800, subp. 2
Vent all emissions to a fabric filter that meets the requirements of CE002 for particulate matter control when burning coal. The fabric filter may be bypassed during startup. Bypassing of the fabric filter shall be for as short a time as is practicable while avoiding damage to the fabric filter and its components, but shall not exceed 8 hours.	Title I Condition: control of particulate emissions.
CONTINUOUS MONITORING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

The owner or operator shall measure opacity, and all SO ₂ , NO _x , and CO ₂ emissions from affected units in accordance with 40 CFR Section 75.10. See GP002 for requirements regarding opacity monitoring, and GP003 for requirements regarding SO ₂ and NO _x monitoring. The SO ₂ and NO _x monitors shall be capable of producing emission rates in units of lb/mmBtu on a one-hour average, a three-hour average and on a 30-day rolling average.	40 CFR Section 75.10 Minn. R. 7017.1020
Operate and maintain the continuous opacity monitor as a partial indicator of compliance with the particulate matter limit.	40 CFR pt. 64
PERFORMANCE TESTING	hdr
Performance Test: due before end of each 60 months starting 09/16/1997 to determine compliance with the Title I condition particulate matter emission limit. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Title I Condition: monitoring for the particulate matter emission limit set under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1, and 40 CFR pt. 64
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2(A) and 3(B)
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3(B)
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2.
STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing: If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test. If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test. In no case will STET operation be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2.
The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4.

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 003 Power Boiler 3

Associated Items: CE 019 Low NOx Burners/Over-Fire Air
 CE 020 SCR (Selective Catalytic Reduction)
 CE 021 Fabric Filter - High Temperature, i.e., T>250 Degrees F
 CE 022 Wet Flue Gas Desulfurization
 CE 029 Carbon Injection
 GP 004 Boilers 1-4 Sulfur Dioxide Limits
 MR 024 Blr 3 CO
 MR 025 Blr 3 Mercury
 MR 027 Blr 3 Opacity
 MR 036 Blr 3 SO2
 MR 037 Blr 3 NOx
 MR 038 Blr 3 CO2
 MR 039 Blr 3 Air Flow
 SV 003 Units 1, 2, & 3 Common stack

What to do	Why to do it								
EMISSION LIMITS	hdr								
Total Particulate Matter: less than or equal to 0.60 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1								
Total Particulate Matter: less than or equal to 0.014 lbs/million Btu heat input for filterable PM.	Minn. R. 7007.0800, subp. 2								
PM < 10 micron: less than or equal to 0.035 lbs/million Btu heat input filterable plus organic and inorganic condensables.	Minn. R. 7007.0800, subp. 2								
Opacity: less than or equal to 20 percent opacity using 6-minute Average except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2								
<p>NOx Averaging Plan</p> <p>Maintain an annual average NOx emission rate of 0.40 lbs/MMBtu and limit the annual heat input to less than or equal to 19,000,000 mmBtu per year.</p> <p>OR</p> <p>Maintain a Btu-weighted annual average emission rate in lbs/mmBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the Btu-weighted annual average emission rate averaged over the same units had they each been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are:</p> <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Clay Boswell</td><td>1, 2, 3, 4</td></tr> <tr> <td>Syl Laskin</td><td>1, 2</td></tr> <tr> <td>Taconite Harbor</td><td>1, 2, 3</td></tr> </table>	Plant	Boiler ID#	Clay Boswell	1, 2, 3, 4	Syl Laskin	1, 2	Taconite Harbor	1, 2, 3	<p>40 CFR Section 76.8 Early election for Group 1, Phase II boilers and 40 CFR Section 76.5(a)(1)</p> <p>Minn. R. 7011.0553</p>
Plant	Boiler ID#								
Clay Boswell	1, 2, 3, 4								
Syl Laskin	1, 2								
Taconite Harbor	1, 2, 3								
Nitrogen Oxides: less than or equal to 0.07 lbs/million Btu heat input based on a 30-day rolling average. This limit does not apply during times of startup, shutdown or malfunction.	Minn. R. 7007.0800, subp. 2								
Refer to GP 004 for sulfur dioxide limits.	hdr								
Hydrogen fluoride: less than or equal to 0.0018 lbs/million Btu heat input .	Title I Condition: to avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000								
Carbon Monoxide: less than or equal to 0.15 lbs/million Btu heat input on a 24-hour rolling average. This limit does not apply during periods of startup, shutdown, or malfunction.	Title I Condition: 40 CFR Section 52.21 BACT limit								
Lead: less than or equal to 0.00004 lbs/million Btu heat input .	Title I Condition: to avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000								
OPERATING REQUIREMENTS	hdr								

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

<p>Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, used oil, wastewater treatment plant sludge, oily paper-based floor dry, pipeline natural gas, propane, and oily materials (includes mixtures of earth substrate (soil, rocks, sod, etc.) or man-made petroleum adsorption material and various petroleum derived fuels (hydraulic, transformer (less than 50 ppm PCB), crankcase or lubricating oils, diesel fuel, and crude oil)).</p> <p>Note: the Permittee is prohibited from using oily materials or wastewater treatment plant sludge as fuel until the Permittee satisfactorily completes the performance testing requirements for these fuels under EU003.</p>	Minn. R. 7007.0800, subp. 2
<p>Boiler cleaning agents limited to: EDTA type and Ammonium Bromate, are generated on-site, 5% of total mass input, oxygen limited to 3% or greater, agents may only be burned while the boiler is operating at 75 percent of rated capacity or greater.</p>	Minn. R. 7007.0800, subp. 2
<p>Burn off-specification and on-specification used oil in accordance with Minn. R. ch. 7045, and not to exceed 2,456 gallons per hour.</p>	Minn. R. 7007.0800, subp. 2
<p>Vent all emissions to a selective catalytic reduction system (CE 020), a fabric filter (CE 021), a wet flue gas desulfurization system (CE 022), and a carbon injection system (CE 029). The Permittee is not required to operate CE 029 when EU 003 combusts only natural gas or when EU 003 combusts natural gas during startup.</p> <p>EU 003 start up operating mode for purposes of this CE 029 operating requirement is defined as when there are less than three EU 003 coal pulverizing mills in service. The Permittee shall maintain records of when EU 003 is operating with less than three mills in service.</p>	Minn. R. 7007.0800, subp. 2
CONTINUOUS MONITORING	hdr
<p>Measure all opacity, SO₂, NO_x, and CO₂ emissions from affected units in accordance with 40 CFR Section 75.10. See GP 002 for requirements regarding opacity monitoring, and GP 003 for requirements regarding SO₂ and NO_x monitoring. The SO₂ and NO_x monitors shall be capable of producing emission rates in units of lb/mmBtu on a one-hour average, a three-hour average and on a 30-day rolling average.</p> <p>The opacity monitor required by this permit shall be located after the fabric filter and prior to the flue gas desulfurization unit.</p>	40 CFR Section 75.10; Minn. R. 7017.1020; 40 CFR pt. 64
<p>Operate a continuous emission monitor to measure all EU 003 CO emissions. The monitor shall be capable of producing emission rates in units of lb/mmBtu on a 24-hour rolling average. See MR 024 for requirements regarding CO monitoring.</p>	Title I Condition: monitoring for BACT limit; Minn. R. 7007.0800, subp. 4
<p>Operate and maintain the continuous opacity monitor as a partial indicator of compliance with the PM and PM₁₀ limits.</p>	40 CFR pt. 64
<p>Mercury Emissions Monitoring: Use a Hg CEMS to measure Hg emissions from EU 003. Additional Hg monitoring requirements are located under subject item MR 025.</p>	Minn. Stat. Section 216B.681
PERFORMANCE TESTING	hdr
<p>Performance Test: due before end of each calendar 60 months starting 04/01/2010 for PM₁₀ emissions.</p>	Minn. R. 7017.2020, subp. 1 40 CFR pt. 64
<p>Performance Test: due before end of each calendar 60 months starting 03/31/2010 for (front-half) particulate matter emissions.</p>	Minn. R. 7017.2020, subp. 1 40 CFR pt. 64
<p>Performance Test: due before end of each calendar 60 months starting 03/31/2010 for hydrogen fluoride emissions.</p>	Title I Condition: to avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
<p>Performance Test: due before end of each calendar 60 months starting 03/30/2010 lead emissions.</p>	Title I Condition: to avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 2(A) and 3(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 3(B)
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.</p>	Minn. R. 7007.0800, subp. 2
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test.</p> <p>If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.</p>	Minn. R. 7017.2020, subp. 4
<p>Performance Test: due 30 days after Performance Test Notification (written) of intent to conduct a performance test while burning waste water sludge. The test shall be for determining compliance with the particulate matter emission limit in Minn. R. 7011.0510, subp. 1. The Permittee shall also concurrently measure CO emissions. Except for the purpose of conducting this performance test, the Permittee shall not use this material as a fuel until the Permittee receives notification from the agency that compliance was demonstrated during the Waste Water Sludge Performance Test.</p>	Minn. R. 7017.2020, subp. 1
<p>Performance Test: due 30 days after Performance Test Notification (written) of intent to conduct a performance test while burning oily materials. The test shall be for determining compliance with the particulate matter emission limit in Minn. R. 7011.0510, subp. 1. The Permittee shall also concurrently measure CO emissions. Except for the purpose of conducting this performance test, the Permittee shall not use this material as a fuel until the Permittee receives notification from the agency that compliance was demonstrated during the Oily Materials Performance Test.</p>	Minn. R. 7017.2020, subp. 1.

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-21**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 004 Power Boiler 4

Associated Items:

- CE 004 Venturi Scrubber
- CE 005 Electrostatic Precipitator - High Efficiency
- CE 006 Spray Tower
- CE 027 LNB/SOFA
- CE 028 ROTA-Mix SNCR
- CE 030 Semi-Dry FGD/Hi-T Fabric Filter
- CE 031 Carbon Injection
- GP 004 Boilers 1-4 Sulfur Dioxide Limits
- MR 026 Blr 4 Mercury
- MR 040 Blr 4 Opacity
- MR 041 Blr 4 Air Flow
- MR 042 Blr 4 SO₂
- MR 043 Blr 4 NO_x
- MR 044 Blr 4 CO₂
- MR 045 Blr 4 CO
- SV 004 Unit 4 stack

What to do	Why to do it								
EMISSION LIMITS	hdr								
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) PSD BACT limit and ambient impacts analysis; 40 CFR Section 60.42(a)(1)								
Opacity: less than or equal to 20 percent opacity based on a six-minute average, except for one six-minute average per hour not to exceed 27%.	40 CFR Section 60.42(a)(2); Minn. R. 7011.0555								
Refer to GP 004 for sulfur dioxide limits.	hdr								
Comply with the applicable Acid Rain emissions limitation for sulfur dioxide. Takes effect for years beginning January 1, 2000.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9(g)(4)								
Nitrogen Oxides: less than or equal to 0.7 lbs/million Btu heat input using 3-hour Average for solid fossil fuels, less than 0.3 lb/mmBtu from liquid fossil fuels, and less than 0.2 lb/mmBtu for gaseous fossil fuels. When fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula: $PS = [0.2x + 0.3y + 0.7z] / (x+y+z)$ where PS is the prorated NO _x standard, x is the % heat input from gaseous fossil fuels, y is the % heat input from liquid fossil fuels, and z is the % heat input from solid fossil fuels.	Title I Condition: 40 CFR Section 52.21(j) PSD BACT limit and ambient impacts analysis; 40 CFR Section 60.44								
<p>NO_x Averaging Plan</p> <p>Maintain an annual average NO_x emission rate of 0.40 lbs/MMBtu and limit the annual heat input to less than or equal to 33,000,000 mmBtu per year.</p> <p style="text-align: center;">OR</p> <p>Maintain a Btu-weighted annual average emission rate in lbs/mmBtu, averaged over the units specified in the NO_x averaging plan, that is less than or equal to the Btu-weighted annual average emission rate averaged over the same units had they each been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are:</p> <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Clay Boswell</td><td>1, 2, 3, 4</td></tr> <tr> <td>Syl Laskin</td><td>1, 2</td></tr> <tr> <td>Taconite Harbor</td><td>1, 2, 3</td></tr> </table>	Plant	Boiler ID#	Clay Boswell	1, 2, 3, 4	Syl Laskin	1, 2	Taconite Harbor	1, 2, 3	40 CFR Section 76.11; Minn. R. 7011.0553
Plant	Boiler ID#								
Clay Boswell	1, 2, 3, 4								
Syl Laskin	1, 2								
Taconite Harbor	1, 2, 3								
Carbon Monoxide: less than or equal to 0.15 lbs/million Btu heat input using 30-day Rolling Average except during periods of startup, shutdown, or malfunction.	Title I Condition: 40 CFR Section 52.21(j) PSD BACT limit								
Carbon Monoxide: less than or equal to 28,826 lbs/hour using 1-Hour Average applicable only during startup and shutdown.	Title I Condition: 40 CFR Section 52.21(j) PSD BACT limit								

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

LIMITS EFFECTIVE AFTER COMPLETION OF INSTALLATION OF CE 030 AND CE 031	hdr
Refer to GP 005 for an additional SO2 limit effective after installation of CE 030 and CE 031.	
Front-half Particulate Matter: less than or equal to 0.015 lbs/million Btu heat input effective upon completion of the initial performance test after completion of CE 030 and CE 031 installation. This limit applies regardless if CE 031 is installed. This limit becomes 0.012 lb/million Btu heat input 90 days after issuance of the MPCA Notice of Compliance letter indicating the test-measured Front-half Particulate Matter emission rate was less than or equal to 0.012 lb/mmBtu during the initial Front-half Particulate Matter performance test after installation of CE 030 and CE 031.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act
PM < 10 micron: less than or equal to 0.020 lbs/million Btu heat input effective upon completion of the initial performance test after completion of CE 030 and CE 031 installation. This limit applies regardless if CE 031 is installed.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act
PM < 2.5 micron: less than or equal to 0.020 lbs/million Btu heat input effective upon completion of the initial performance test after completion of CE 030 and CE 031 installation. This limit applies regardless if CE 031 is installed.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act
Mercury: less than or equal to 1.2E-06 lbs/million Btu heat input using 365-day Rolling Average effective 270 days after completion of the first initial performance test of EU 004 (for PM, PM10, PM2.5, or fluorides) after CE 030 and CE 031 installation. This limit is subject to revision under Minn. Stat. Section 216B.687. 'Day' is a 'boiler operating day as defined at 40 CFR Section 63.10042.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act
Fluorides: less than or equal to 0.0084 lbs/million Btu heat input effective upon completion of the initial performance test after completion of CE 030 and CE 031 installation. This limit applies regardless if CE 031 is installed.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
The MPCA will incorporate into this permit the mercury reduction reasonably expected to be achieved by EU 004 due to the installation of CE 030 and CE 031 as an enforceable state-only reduction. Incorporation of the reduction shall occur after the start-up period following installation of CE 030 and CE 031.	Minn. Stat. 216B.687, subd. 1; Minn. R. 7007.0800, subp. 2
OPERATING REQUIREMENTS	hdr
Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, oily paper-based floor dry, used oil, pipeline natural gas, and propane.	Minn. R. 7007.0800, subp. 2
Boiler cleaning agents limited to: EDTA type and Ammonium Bromate, are generated on-site, 5% of total mass input, oxygen limited to 3% or greater, agents may only be burned while the boiler is operating at 75 percent of rated capacity or greater.	Minn. R. 7007.0800, subp. 2
Burn off-specification and on-specification used oil in accordance with Minn. R. ch. 7045, not to exceed 3824 gallons/hour.	Minn. R. 7007.0800, subp. 2
Maintain SV 004 exit flue gas temperature at a minimum of 135 degrees F.	Minn. R. ch. 7009
Vent all EU 004 emissions to a venturi scrubber (CE 004), electrostatic precipitator (CE 005), and spray tower (CE 006). Upon EU 004 initial startup after completion of CE 030 and CE 031 installation, vent all EU 004 emissions to CE 030, and retire CE 004, CE 005, and CE 006. EU 004 initial startup is the first firing of solid fuel in EU 004 after completion of the retrofit project.	Title I Condition: Title I BACT requirements for control of particulate matter and sulfur dioxide
Vent all EU 004 emissions to CE 031 for control of mercury emissions upon EU 004 initial startup after completion of CE 030 and CE 031 installation. The Permittee is not required to operate CE 031 when EU 004 combusts only natural gas or when EU 004 combusts natural gas during startup. EU 004 start up operating mode for purposes of this CE 031 operating requirement is defined as when there are less than three EU 004 coal pulverizing mills in service. The Permittee shall maintain records of when EU 004 is operating with less than three mills in service. EU 004 initial startup is defined as the first firing of solid fuel in EU 004 after completion of the retrofit project.	Minn. R. 7007.0800, subp. 2
Startup and Shutdown Operations: For the purposes of CO emissions, EU 004 startup and shutdown operation is defined as all EU 004 operation during which the gross MW electric production is less than or equal to 320 MW.	Title I Condition: 40 CFR Section 52.21(j) PSD BACT limit
PERFORMANCE TESTING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-23**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Performance Test: due before end of each 60 months starting 09/27/1997 to determine compliance with the Title I condition particulate matter emission limit. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Title I Condition: monitoring for the particulate emission limit set under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 365 days after Initial Startup of EU 004 after installation of CE 030 and CE 031 to measure SV 004 (Front-half) PM emissions. For the purposes of this requirement, Initial Startup is the first firing of solid fuel in EU 004 after completion of CE 030 and CE 031 installation. After completion of CE 030 and CE 031 installation, this testing requirement supersedes the Title I PM testing requirement for PM testing at 60-month intervals starting 09/27/1997.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 365 days after Initial Startup of EU 004 after installation of CE 030 and CE 031 to measure SV 004 PM10 emissions. For the purposes of this requirement, Initial Startup is the first firing of solid fuel in EU 004 after completion of CE 030 and CE 031 installation.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 365 days after Initial Startup of EU 004 after installation of CE 030 and CE 031 to measure SV 004 PM2.5 emissions. For the purposes of this requirement, Initial Startup is the first firing of solid fuel in EU 004 after completion of CE 030 and CE 031 installation.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 365 days after Initial Startup of EU 004 after installation of CE 030 and CE 031 to measure SV 004 Fluoride emissions. For the purposes of this requirement, Initial Startup is the first firing of solid fuel in EU 004 after completion of CE 030 and CE 031 installation.	Minn. R. 7017.2020, subp. 1
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2(A) and 3(B)
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3(B)
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2.

TABLE A: LIMITS AND OTHER REQUIREMENTS
A-24

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test.</p> <p>If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	<p>Minn. R. 7007.0800, subp. 2.</p>
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.</p>	<p>Minn. R. 7017.2020, subp. 4.</p>
<p>CONTINUOUS MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Measure all Opacity, SO₂, NO_x, and CO₂ emissions from affected units in accordance with 40 CFR Section 75.10. See GP 002 for requirements regarding opacity monitoring, and GP 003 for requirements regarding SO₂ and NO_x monitoring. The SO₂ and NO_x monitors shall produce emission rates in units of lb/mmBtu on a one-hour average, a three-hour average, and a 30-day rolling average.</p> <p>Using the 30-day rolling averages for SO₂, calculate and submit the annual SO₂ emission rate along with the annual compliance certification.</p>	<p>40 CFR Section 75.10 and Minn. R. ch. 7017</p>
<p>Operate and maintain the continuous opacity monitor as a partial indicator of compliance with the PM limit.</p>	<p>40 CFR pt. 64</p>
<p>Operate and maintain the SO₂ continuous emissions monitoring system to meet the requirements of CAM at 40 CFR pt. 64.</p>	<p>40 CFR Section 64.3(d)</p>
<p>Measure stack gas exit temperature.</p>	<p>Minn. R. ch. 7009</p>
<p>Mercury Emissions Monitoring: Use a Hg CEMS to measure Hg emissions from EU 004. Additional Hg monitoring requirements are located under subject item MR 026.</p>	<p>Minn. Stat. Section 216B.681</p>
<p>Establish Baseline Mercury Emission Rate: Use mercury monitors to establish the EU 004 baseline mercury emission rate.</p> <p>This is a state only requirement and is not enforceable by the EPA administrator and citizens under the Clean Air Act.</p>	<p>Minn. Stat. Section 216B.681</p>
<p>Operate and maintain a CO continuous emission monitor (CEMS) according to 40 CFR pt. 60, Appendix B, Performance Standard 4 to measure all CO emissions. The monitor shall produce emission rates in units of lb/mmBtu on a 30-day rolling average and lb/hr on a 1-hour average.</p>	<p>Title I Condition: 40 CFR Section 52.21 monitoring for BACT limit; 40 CFR pt. 60, Appendix B; Minn. R. 7017.1006; Minn. R. 7017.1160, subp. 3</p>
<p>Determination of CO lb/mmBtu and lb/hr Emission Rates:</p> <p>The Permittee shall determine CO lb/mmBtu 30-day rolling emission rates by first determining the one-minute CO emissions on a lb/mmBtu basis using the following equation:</p> $\text{CO lb/mmBtu} = [(\text{CO ppmv}) * (\text{CO mol wt}) * (2.59\text{E-}09) * (\text{Fc-factor})] * [100/(\text{CO}_2\text{ \%})]$ <p>where:</p> <p>CO ppmv = CO measured by MR 045 (ppmv) CO mol wt = CO molecular weight (28) 2.59E-09 = combustion calculation formula constant (lb/dscf) Fc-Factor = subbituminous coal CO₂-based Fc-factor, dscf CO₂/mmBtu established by EPA (1840 as of 02/2009) 100 = percent correction factor CO₂ % = CO₂ % (by volume) measured by EU 004 CO₂ CEMS (MR 044)</p> <p>One-minute lb/mmBtu CO emissions are used to calculate the hourly block average CO lb/mmBtu emission rate. Hourly average emission rates are averaged over each 30-day period to determine the 30-day rolling average CO lb/mmBtu emission rate.</p> <p>(continued)</p>	<p>Minn. R. 7007.0800, subp. 4(B)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-25**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Determination of CO lb/mmBtu and lb/hr Emission Rates (continued): Hourly CO lb/hr emission rates are determined once each hour using the following equation: $\text{CO lb/hr} = [\text{CO lb/mmBtu (hourly)}] * [\text{Heat Input (hourly)}]$ where: CO lb/hr = hourly CO emissions in pounds per hour CO lb/mmBtu (hourly) = lb/mmBtu CO hourly emission rate determined with CO CEMS (MR 045) Heat Input (hourly) = heat input during the hour corresponding to the lb/mmBtu CO emission rate determined with the Data Acquisition Handling and System	Minn. R. 7007.0800, subp. 4(B)
REPORTING - refer to Table B for additional EU 004 reporting requirements	hdr
Submit the calculations and annual average emission rate of sulfur dioxide along with the annual compliance certification.	Minn. R. 7021.0050

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-26**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 010 Emergency Generator 4**Associated Items:** SV 010 Emergency Generator 4

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Fuel type: Diesel fuel oil or distillate fuel oil only	Minn. R. 7005.0100, subp. 35a
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of fuel oil, certifying that the sulfur content does not exceed 0.5% by weight.	Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-27**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 011 Coal Handling-Crusher Building**Associated Items:** CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 011 Coal Handling-Crusher Building

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operate fabric filter when emissions from the equipment are vented to the atmosphere that meets the requirements of GP 005.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-28**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 012 Coal Handling-Crusher & Sampler House**Associated Items:** CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 012 Coal Handling-Crusher & Sampler House

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operate fabric filter when emissions from the equipment are vented to the atmosphere that meets the requirements of GP 005.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-29**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 013 Fly Ash - #1&2 Storage Silo**Associated Items:** CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 013 Fly Ash - #1&2 Storage Silo

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operate fabric filter when emissions from the equipment are vented to the atmosphere that meets the requirements of GP 005.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-30**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 014 Fly Ash - #1&2 Ash Hoppers**Associated Items:** CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 014 Fly Ash - #1&2 Ash Hoppers

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operate fabric filter when emissions from the equipment are vented to the atmosphere that meets the requirements of GP 005.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-31**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 015 Hg Additive Handling and Storage - Unit 3**Associated Items:** CE 013 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 015 Additive Handling and Storage

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.01 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000, also meets the requirements of Minn. R. 7011.0715 subp. 1(A)
PM < 10 micron: less than or equal to 0.01 grains/dry standard cubic foot	Title I Condition: To avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
OPERATING REQUIREMENTS	hdr
Vent all emissions to a fabric filter that meets the requirements of GP 005.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Refer to GP 005 for additional requirements for CE 013.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-32**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 017 Fly Ash Storage Silo A - Bin Vent**Associated Items:** CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 017 Fly Ash Storage Silo A - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000, also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To avoid major modification classification under 40 CFR Section 52.21 Section and Minn. R. 7007.3000
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To avoid major modification classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
OPERATING REQUIREMENTS	hdr
Vent all emissions to a fabric filter that meets the requirements of GP 005.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Refer to GP 005 for additional requirements for CE 015.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-33**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 018 Fly Ash Loadout A - Truck Bay**Associated Items:** CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 044 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 018 Fly Ash Loadout A - Truck Bay

What to do	Why to do it
EMISSION LIMITS These limits apply to EU 018 emissions vented to CE 044 and exhausted to the atmosphere through SV 018 (and do not apply to uncaptured EU 018 emissions or EU 018 emissions vented to CE 015 and exhausted through SV 017).	hdr
Total Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot (meets limit under Minn. R. 7011.0715 of 0.068 gr/dscf) for SV 018.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.010 grains/dry standard cubic foot for SV 018.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000
PM < 2.5 micron: less than or equal to 0.010 grains/dry standard cubic foot for SV 018.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
OPERATING REQUIREMENTS	hdr
Vent all captured emissions to a fabric filter (CE 044) that meets the requirements of GP 005.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Refer to GP 005 for additional requirements for CE 044.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-34**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 019 Limestone Storage - Bin Vent**Associated Items:** CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 019 Limestone Storage - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
OPERATING REQUIREMENTS	hdr
Vent all emissions to a fabric filter that meets the requirements of GP 005.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Refer to GP 005 for additional requirements for CE 016.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-35**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 020 Limestone Day Bin 1**Associated Items:** CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 020 Limestone Day Bin 1 - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
OPERATING REQUIREMENTS	hdr
Vent all emissions to a fabric filter that meets the requirements of GP 005.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Refer to GP 005 for additional requirements for CE 017.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-36**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 021 Limestone Day Bin 2**Associated Items:** CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 021 Limestone Day Bin 2 - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
OPERATING REQUIREMENTS	hdr
Vent all emissions to a fabric filter that meets the requirements of GP 005.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Refer to GP 005 for additional requirements for CE 018.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-37**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 023 Emergency Gen. Unit 3 APCE 300 kW CI**Associated Items:** SV 022 Emergency Generator - Unit 3

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Opacity: less than or equal to 20 percent during accelartion mode; 15 percent during lugging mode; and 50 percent during the peaks in either the acceleration or lugging modes.	40 CFR Section 60.4205(b)
Carbon Monoxide: less than or equal to 3.0 grams per kilowatt-hour.	Title I Condition: 40 CFR Section 52.21(j), BACT emission limit, also meets the requirements of 40 CFR Section 60.4205(b)
Non-methane Hydrocarbons plus Nitrogen Oxides: Less than or equal to 4.0 grams per kilowatt-hour	40 CFR Section 60.4205(b)
Total Particulate Matter: less than or equal to 0.20 grams per kilowatt-hour.	40 CFR Section 60.4205(b)
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . Combustion of fuel with a sulfur content of 0.5 percent by weight or less meets this requirement.	Minn. R. 7011.2300, subp. 2
OPERATING REQUIREMENTS	hdr
Use diesel fuel that meets the requirements of 40 CFR Section 80.510(b): (1) Sulfur content. 15 ppm maximum for Non-Road diesel fuel. (2) Cetane index or aromatic content, as follows: (i) A minimum cetane index of 40; or (ii) A maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(b)
Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of paragraphs (a) and (b) of this section beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator.	40 CFR Section 60.4207(c)
Operate and maintain the engine according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. Only change those settings that are permitted by the manufacturer. The permittee shall also meet the requirements of 40 CFR parts 89, 94, and 1068 as they apply to you.	40 CFR Section 60.4211(a)
Meet the definition of "Emergency stationary internal combustion engine" - any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.	40 CFR Section 60.4219
EU 033 may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with EU 033. EU 033 maintenance checks and readiness testing is limited to 100 hours per year. There is no time limit on the use of EU 033 in emergency situations. The Permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of EU 033 beyond 100 hours per year. EU 033 may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing.	40 CFR Section 60.4211(f); Minn. R. 7011.3520

(cont.)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-38**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

(continued)	40 CFR Section 60.4211(f); Minn. R. 7011.3520
The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For the Permittee, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in Section 60.4211(f), is prohibited.	
After December 31, 2008, the permittee may not install a stationary CI ICE that does not meet the applicable requirements for 2007 model year engines.	40 CFR Section 60.4208(a)
MONITORING	hdr
Install a non-resettable hour meter prior to startup of the engine.	40 CFR Section 60.4209(a)
PERFORMANCE TESTING	hdr
If the permittee conduct performance tests, the tests must be completed in accordance with 40 CFR Section 60.4212(a) through 40 CFR Section 60.4212(d).	40 CFR Section 60.4212
Performance Test: due 180 days after achieving maximum capacity for CO emissions.	Title I Condition: monitoring for CO BACT limit
COMPLIANCE DEMONSTRATION	hdr
Operate and maintain the unit in accordance with the standards as required by 40 CFR Section 60.4205, according to the manufacturer's written instructions, or according to the procedures developed by the owner or operator that are approved by the engine manufacturer, for the entire life of the engine. Settings for the unit may not be changed unless permitted by the manufacturer.	40 CFR Section 60.4206 and 40 CFR Section 60.4211(a)
The permittee must demonstrate compliance by purchasing an engine certified to conform with the emission standards listed in 40 CFR Section 52.05(b) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.	40 CFR Section 60.4211(c)
Recordkeeping - Hours of operation: The permittee shall maintain documentation on-site that the unit is to be used for emergency (including training and testing) purposes, only that qualifies under the limitation above of 100 hours per year for checks and readiness testing. (40 CFR Section 60.4211(e)).	Minn. R. 7007.0800, subps. 4 and 5
Recordkeeping - Fuel Type: The permittee shall keep records of the type of fuel burned in this unit when in operation.	Minn. R. 7007.0800, subp. 4 and 5
The permittee shall maintain records of the operation of the engine in emergency service that is recorded through the non-resettable hour meter. The record must include the time of operation and the reason the generator was in operation during that time. This requirement is applicable when using a generator whose model year is 2012 or later, if the emergency engine also does not meet the standards for non-emergency engines for the 2012 model.	40 CFR Section 60.4214(b)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-39**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 024 Limestone Storage - Bin Vent**Associated Items:** CE 032 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 024 Limestone Storage - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 032.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-40**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 025 Lime Day Bin A - Bin Vent**Associated Items:** CE 033 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 025 Lime Day Bin A - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 033.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-41**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 026 Lime Day Bin B - Bin Vent**Associated Items:** CE 034 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 026 Lime Day Bin B - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 034.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-42**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 027 Lime Day Bin C - Bin Vent**Associated Items:** CE 035 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 027 Lime Day Bin C - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 035.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-43**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 028 Lime Day Bin D - Bin Vent**Associated Items:** CE 036 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 028 Lime Day Bin D - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 036.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-44**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 029 Lime Day Bin E - Bin Vent**Associated Items:** CE 037 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 029 Lime Day Bin E - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 037.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-45**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 030 Hg Additive Handling and Storage- Unit 4**Associated Items:** CE 038 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 030 Activated Carbon Silo B-Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 038.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-46**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 031 Fly Ash Storage Silo B - Bin Vent**Associated Items:** CE 039 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 031 Fly Ash Storage Silo B - Bin Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.0025 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.0025 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.0025 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 039.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-47**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 032 Fly Ash Loadout B - Truck Bay**Associated Items:** CE 040 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 032 Fly Ash Loadout B - Truck Bay

What to do	Why to do it
EMISSION LIMITS AND OPERATING REQUIREMENTS	hdr
Total Particulate Matter: less than or equal to 0.0025 grains/dry standard cubic foot unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; also meets the requirements of Minn. R. 7011.0715, subp. 1(A)
PM < 10 micron: less than or equal to 0.0025 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
PM < 2.5 micron: less than or equal to 0.0025 grains/dry standard cubic foot	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
EU 032 Truck Bay doors shall be closed at all times when ash is loaded out of the silo.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Vent all emissions to a fabric filter that meets the requirements of GP 005 for CE 040.	Title I Condition: To limit potential emission increases to less than significant under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-48**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: EU 033 Emergency Gen. Unit 3 398 hp 250 kW CI**Associated Items:** SV 009 Diesel Emergency Generator 3

What to do	Why to do it
EU 033 is a 2012 model year compression ignition 250 kilowatt-hour emergency generator with a brake-horsepower rating of 398 hp at 100% load..	hdr
For EU 033, the Permittee shall only install an engine certified to the emission standards in 40 CFR Sections 60.4204(b), or 60.4205(b) or (c), as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in Section 60.4204(g).	40 CFR Section 60.4211(c); Minn. R. 7011.3520
EMISSION LIMITS	hdr
Total Non-Methane Hydrocarbons and NOx: less than or equal to 4.0 grams/kilowatt-hour	40 CFR Section 60.4205(b) & Table 1 of 40 CFR Section 89.112; Minn. R. 7011.3520
Carbon Monoxide: less than or equal to 3.5 grams/kilowatt-hour	40 CFR Section 60.4205(b) & Table 1 of 40 CFR Section 89.112; Minn. R. 7011.3520
Total Particulate Matter: less than or equal to 2.0 grams/kilowatt-hour	40 CFR Section 60.4205(b) & Table 1 of 40 CFR Section 89.112; Minn. R. 7011.3520
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . Combustion of fuel with a sulfur content of 0.5 percent by weight or less meets this requirement.	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent during acceleration mode; 15 percent during lugging mode; and 50 percent during the peaks in either the acceleration or lugging modes.	40 CFR Sections 60.4205(b) & 89.113(a); Minn. R. 7011.3520
Opacity: less than or equal to 20 percent once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
TESTING, OPERATING, MAINTENANCE, AND NOTIFICATION REQUIREMENTS	hdr
If the Permittee conducts performance tests in-use, the Permittee must meet the NTE standards as indicated in Section 60.4212.	40 CFR Section 60.4205(e); Minn. R. 7011.3520
If the Permittee conducts a performance test pursuant to pt. 60, subp. IIII, the tests must be conducted according to paragraphs (a) through (e) of Section 60.4212.	40 CFR Section 60.4212; Minn. R. 7011.3520
The Permittee must operate and maintain EU 033 so that it achieves the emission standards as required in 40 CFR Sections 60.4204 and 60.4205 over the entire life of the engine.	40 CFR Section 60.4206; Minn. R. 7011.3520
Diesel fuel must meet the requirements of 40 CFR Section 80.510(b) as follows: 1. Sulfur content: less than or equal to 15 ppm; 2. Cetane index or aromatic content: (i) a minimum cetane index of 40, or (ii) a maximum aromatic content of 35 volume percent.	40 CFR Sections 60.4207 and 80.510(b); Minn. R. 7011.3520
The Permittee must install a non-resettable hour meter prior to startup of the emergency engine.	40 CFR Section 60.4209; Minn. R. 7011.3520
The Permittee shall: (1) Operate and maintain the stationary EU 033 and control device according to the manufacturer's emission-related written instructions; (2) Change only those emission-related settings that are permitted by the manufacturer; and (3) Meet the applicable requirements of 40 CFR parts 89, 94 and/or 1068.	40 CFR Section 60.4211(a); Minn. R. 7011.3520
EU 033 may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with EU 033. EU 033 maintenance checks and readiness testing is limited to 100 hours per year. There is no time limit on the use of EU 033 in emergency situations. The Permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of EU 033 beyond 100 hours per year. EU 033 may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. (cont.)	40 CFR Section 60.4211(f); Minn. R. 7011.3520

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-49**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

(continued) The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For the Permittee, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in Section 60.4211(f), is prohibited.	40 CFR Section 60.4211(f); Minn. R. 7011.3520
If the Permittee does not install, configure, operate, and maintain EU 033 (which is in the greater than or equal to 100 HP and less than or equal to 500 HP engine size bracket) and control device according to the manufacturer's emission-related written instructions, or the Permittee changes emission-related settings in a way that is not permitted by the manufacturer, the Permittee must demonstrate compliance as follows: (2) The Permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate EU 033 in a manner consistent with good air pollution control practice for minimizing emissions.	40 CFR Section 60.4211(g); Minn. R. 7011.3520
(continued) (continued) In addition, the Permittee must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of EU 033 startup, or within 1 year after EU 033 and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after the Permittee changes EU 033 emission-related settings in a way that is not permitted by the manufacturer.	40 CFR Section 60.4211(g); Minn. R. 7011.3520
The Permittee is not required to submit an initial notification. Starting with the model years in table 5 to pt. 60, subp. IIII, if EU 033 does not meet the standards applicable to non-emergency engines in the applicable model year, the Permittee must keep records of the operation of EU 033 in emergency and non-emergency service that are recorded through the non-resettable hour meter. The Permittee must record the time of EU 033 operation and the reason EU 033 was in operation during that time.	40 CFR Section 60.4214; Minn. R. 7011.3520
Table 8 of pt. 60, subp. III shows which parts of the General Provisions in Sections 60.1 through 60.19 apply to the Permittee.	40 CFR Section 60.4218; Minn. R. 7011.3520
40 CFR PT. 63 REQUIREMENTS	hdr
EU 033 is an affected source under 40 CFR pt. 63, subp. ZZZZ because it is a new stationary reciprocating internal combustion engine (constructed after June 12, 2006) with a site rating of less than 500 brake horsepower located at a major source of hazardous air pollutants.	40 CFR Section 63.6590(2)(ii)
EU 033 shall meet the requirements of 40 CFR pt. 63 by meeting the requirements of 40 CFR pt. 60, subp. IIII. No further requirements apply for EU 033 under pt. 63.	40 CFR Section 63.6590(3)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-50**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 001 Fabric Filter - High Temperature, i.e., T>250 Degrees F**Associated Items:** EU 001 Power Boiler 1

What to do	Why to do it
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: operating requirement for PM limit set under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded opacity exceeds the permitted limit; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the opacity to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for particulate matter. The owner or operator shall use opacity as a surrogate for monitoring particulate matter, and shall measure the opacity by means of a COM. Parameter range indicating normal operation is opacity as a six-minute average less than or equal to 20 percent opacity.	40 CFR Section 64.3(b) or (d) 40 CFR Section 64.6(c)(1)(i) 40 CFR Section 64.6(c)(1)(ii) Minn. R. 7017.0200
The owner or operator shall conduct the monitoring required under this part upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintaining necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall continuously operate the monitoring system at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under Section 64.7 and Section 64.8 when the exceedance or excursion are greater than the limit and averaging period with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-51**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 002 Fabric Filter - High Temperature, i.e., T>250 Degrees F**Associated Items:** EU 002 Power Boiler 2

What to do	Why to do it
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: operating requirement for PM limit set under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded opacity exceeds the permitted limit; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the opacity to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for particulate matter. The owner or operator shall use opacity as a surrogate for monitoring particulate matter, and shall measure the opacity by means of a COM. Parameter range indicating normal operation is opacity as a six-minute average less than or equal to 20 percent opacity.	40 CFR Section 64.3(b) or (d) 40 CFR Section 64.6(c)(1)(i) 40 CFR Section 64.6(c)(1)(ii) Minn. R. 7017.0200
The owner or operator shall conduct the monitoring required under this part upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintaining necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall continuously operate the monitoring system at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under Section 64.7 and Section 64.8 when the exceedance or excursion are greater than the limit and averaging period with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-52**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 004 Venturi Scrubber**Associated Items:** EU 004 Power Boiler 4

What to do	Why to do it
These requirements are no longer effective upon removal of CE 004. CE 004 will be removed as part of the EU 004 emission control retrofit authorized by permit No. 06100004-007 that involves the installation of CE 030 and CE 031 for particulate matter/SO ₂ and mercury control, respectively.	Minn. R. 7007.0800, subp. 2
A minimum of one venturi slurry pump for each particulate scrubber module in service shall be operated at all times during the operation of EU004.	Title I Condition: operating requirement for PM limit set under 40 CFR Section 52.21(k)
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for PM. The owner or operator shall use opacity as a surrogate for monitoring PM, and shall measure the opacity by means of a COM. Parameter range indicating normal operation is opacity as a six-minute average less than or equal to 20 percent opacity.	40 CFR Section 64.3(b) or (d) 40 CFR Section 64.6(c)(1)(i) 40 CFR Section 64.6(c)(1)(ii) Minn. R. 7017.0200
The owner or operator shall conduct the monitoring required under this part upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintaining necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall conduct all monitoring in continuous operation at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under Section 64.7 and Section 64.8 when the exceedance or excursion are greater than the limit and averaging period with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-53**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 005 Electrostatic Precipitator - High Efficiency**Associated Items: EU 004 Power Boiler 4**

What to do	Why to do it
These requirements are no longer effective upon removal of CE 005. CE 005 will be removed as part of the EU 004 emission control retrofit authorized by permit No. 06100004-007 that involves the installation of CE 030 and CE 031 for particulate matter/SO ₂ and mercury control, respectively.	Minn. R. 7007.0800, subp. 2
When bypass reheat is required to maintain compliance with the minimum flue gas exit temperature specified under SV004 in this permit, a portion of the total flue gas from EU004 may bypass the particulate matter emissions scrubber (CE004) and sulfur dioxide absorber (CE006), and be treated by a minimum of one unit of CE005 (electrostatic precipitator). When required to operate, CE005 shall not be operated with more than three of the bus-sections de-energized.	Title I Condition: operating requirement for PM limit set under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2 and 14
When bypass reheat is not required to maintain compliance with the minimum flue gas exit temperature, all of the EU004 flue gas shall be treated by the particulate matter emissions scrubber (CE004) and sulfur dioxide absorber (CE006). After closing the inlet and outlet dampers to CE005, the Permittee may de-energize CE005.	
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for PM. The owner or operator shall use opacity as a surrogate for monitoring PM, and shall measure the opacity by means of a COM. Parameter range indicating normal operation is opacity as a six-minute average less than or equal to 20 percent opacity.	40 CFR Section 64.3(b) or (d) 40 CFR Section 64.6(c)(1)(i) 40 CFR Section 64.6(c)(1)(ii) Minn. R. 7017.0200
The owner or operator shall conduct the monitoring required under this part upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintaining necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall conduct all monitoring in continuous operation at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under Section 64.7 and Section 64.8 when the exceedance or excursion are greater than the limit and averaging period with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-54**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 021 Fabric Filter - High Temperature, i.e., T>250 Degrees F**Associated Items:** EU 003 Power Boiler 3

What to do	Why to do it
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded opacity exceeds the permitted limit; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the opacity to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for PM and PM10. The owner or operator shall use opacity and pressure differential as surrogates for monitoring PM and PM10. Opacity shall be measured opacity by means of a COMS and differential pressure shall be measured by a differential pressure gauge. Parameter range indicating normal operation is opacity (3-hour rolling average) less than or equal to 14 percent opacity, and differential pressure (1-minute average) less than or equal to 11.0 inches water column. The 14% opacity value is a trigger value that prompts reponse to the excursion and is not an enforceable opacity limit.	40 CFR Section 64.3(b) or (d) 40 CFR Section 64.6(c)(1)(i) 40 CFR Section 64.6(c)(1)(ii) Minn. R. 7017.0200
An excursion or exceedance from the specified parameter range occurs when: 1. the measured pressure drop deviates from the specified minimum or maximum by 0.1 inch WC or more on a 1-minute average basis, or 2. the measured opacity exceeds 14% on a 3-hour rolling average.	40 CFR Section 64.6(c)(2)
The owner or operator shall conduct the monitoring required under this part upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintaining necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall continuously operate the monitoring system at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-55**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR Section 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under 40 CFR Sections 64.7 and 64.8 when the exceedance or excursion are greater than the limit and averaging period with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-56**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 029 Carbon Injection**Associated Items:** EU 003 Power Boiler 3

What to do	Why to do it
The Permittee shall operate and maintain CE 029 at all times that EU 003 is in operation except when EU 003 combusts only natural gas or when EU 003 combusts natural gas during startup. The Permittee shall document periods of non-operation of CE 029 except for CE 029 non-operation during EU 003 startup (which is defined as less than three EU 003 coal pulverizing mills in service). The Permittee shall maintain records of when EU 003 is operating with less than three mills in service.	Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-57** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: CE 030 Semi-Dry FGD/Hi-T Fabric Filter**Associated Items:** EU 004 Power Boiler 4

What to do	Why to do it
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
The Permittee shall operate and maintain CE 030 at all times that EU 004 is in operation. The Permittee shall document periods of non-operation of CE 030.	Title I Condition: Operation and maintenance requirement for PM limit based on 40 CFR Section 52.21(j) & (k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 030 so that it achieves a control efficiency for Total Particulate Matter: greater than or equal to 99.0 percent control efficiency	Title I Condition: Operation and maintenance requirement for PM limit based on 40 CFR Section 52.21(j) & (k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 030 so that it achieves a control efficiency for PM < 10 micron: greater than or equal to 99.0 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 030 so that it achieves a control efficiency for PM < 2.5 micron: greater than or equal to 99.0 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 030 so that it achieves a control efficiency for Fluorides: greater than or equal to 90.0 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain CE 030 in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 20.0 inches of water column using 5-minute average until a new range is set pursuant to Minn. R. 7017.0205, subp. 3 based on the values recorded during the initial MPCA-approved performance tests where compliance was demonstrated for PM, PM10, and PM2.5 emissions. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least four times each hour.	Title I Condition: Control equipment operating parameter for the PM limit based on 40 CFR Section 52.21(j) BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
COMPLIANCE ASSURANCE MONITORING	hdr
The Permittee shall comply with the approved PM CAM plan upon approval of the plan. The Permittee may propose opacity (if it is limiting relative to PM emissions) and pressure differential as surrogates for monitoring PM. Prior to CAM plan submittal and approval, parameter ranges indicating normal operation are: 1. opacity (3-hour rolling average) less than or equal to the value established by the initial EU 004 PM performance test after installation of CE 030, and 2. differential pressure (5-minute average) greater than or equal to 2.0 inches w.c. and less than or equal to 20.0 inches w.c., and updated by the values measured during the initial EU 004 PM performance test after installation of CE 030. The opacity value is a trigger value that prompts response to the excursion and is not an enforceable opacity limit.	40 CFR Section 64.3(b) or (d) 40 CFR Section 64.6(c)(1)(i) 40 CFR Section 64.6(c)(1)(ii) Minn. R. 7017.0200
An excursion or exceedance from the specified parameter range occurs when: 1. the measured pressure drop deviates from the specified minimum or maximum by 0.1 inch WC or more on a 5-minute average basis, or 2. the measured opacity exceeds the opacity trigger value determined (on a 3-hour rolling average) from opacity measured during the initial EU 004 performance test after completion of CE 030 installation.	40 CFR Section 64.6(c)(2)
The owner or operator shall conduct the monitoring required under this part upon startup of CE 030.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintaining necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall continuously operate the monitoring system at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-58**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR Section 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under 40 CFR Sections 64.7 and 64.8 when the exceedance or excursion are greater than the limit and averaging period with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Minnesota Power Inc - Boswell Energy Ctr
Permit Number: 06100004 - 007

Subject Item: CE 031 Carbon Injection

Associated Items: EU 004 Power Boiler 4

What to do	Why to do it
The Permittee shall operate and maintain CE 031 at all times that EU 004 is in operation except when EU 004 combusts only natural gas or when EU 004 combusts natural gas during startup. The Permittee shall document periods of non-operation of CE 031 except for CE 031 non-operation during EU 004 startup (which is defined as less than three EU 004 coal pulverizing mills in service). The Permittee shall maintain records of when EU 004 is operating with less than three mills in service.	Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-60**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: FS 004 Unpaved Roads**Associated Items:** CE 042 Dust Suppression by Chemical Stabilizers or Wetting Agents

CE 043 2 - 3 % Moisture Content

What to do	Why to do it
OPERATING CONDITIONS	hdr
<p>Fugitive Dust Control - Dry Fly Ash Haul Road:</p> <ul style="list-style-type: none"> - apply at least 3 gallons for each 100 square feet every 24 hours; - a rainfall event of at least 0.1 inch during the previous 24 hours shall substitute for one water application; - if the road cannot be watered because the ambient air temperature is less than 35 degrees F or if conditions due to weather, in combination with the application of water, could create hazardous driving conditions, then watering shall be postponed and accomplished as soon as the conditions preventing water application have abated; - water application is not required on days when there is no vehicle traffic; and - following any day when water is not applied based on the absence of traffic, water shall be applied within 3 hours of commencement of vehicle traffic, unless another criterion for not watering is met. <p>This requirement is no longer effective upon completion of paving the dry fly ash haul road.</p>	Minn. R. 7011.0150
RECORDKEEPING	hdr
<p>Maintain daily records of:</p> <ul style="list-style-type: none"> - whether there was 0.1 inch or more of rainfall in the last 24 hours, - temperature, - if conditions exist where watering would create hazardous driving, - dates of watering and areas watered, and - amounts of water applied. <p>This requirement is no longer effective upon completion of paving the dry fly ash haul road.</p>	Minn. R. 7007.0800, subp. 4
<p>Install: due 60 days before Initial Startup of the EU 004 control equipment retrofit (installation of CE 030 and CE 031). 'Install' is the paving of the (currently unpaved) ash haul road. Upon completion of paving the ash haul road, the Permittee shall implement the requirements of FS 007 for the paved ash haul road.</p>	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000; Minn. R. 7011.0150

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-61**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: FS 007 Paved Roads**Associated Items:** CE 041 Paved road watering/sweeping

What to do	Why to do it
OPERATING REQUIREMENTS	hdr
<p>Under dry pavement conditions, if the temperature is less than 35 degrees F, or if conditions due to weather in combination with the application of water, could create hazardous driving conditions, paved plant roads shall be swept weekly. Sweeping is not required if the pavement is snow or ice covered.</p> <p>Under dry pavement conditions, if the temperature is greater than 35 degrees F, and conditions due to weather in combination with the application of water will not create hazardous driving conditions, paved plant roads shall be swept and flushed weekly.</p>	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000; Minn. R. 7011.0150
RECORDKEEPING	hdr
<p>Maintain daily records of:</p> <ul style="list-style-type: none">- whether and which areas are snow and ice covered,- whether and which areas are dry,- dates of sweeping and areas swept,- dates of flushing and areas flushed, and- amounts of water applied when flushing.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-62**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 020 Blr 1 Opacity**Associated Items:** CM 004 Boiler 1: 20% Opacity, EU001, 6-min ave.

EU 001 Power Boiler 1

GP 002 Opacity Monitors

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (Additional requirements are located under the associated GP subject item)	hdr
COMS Calibration Error Audit: due before end of each calendar half-year starting 03/28/2007 for MR020. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-63**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 021 Blr 2 Opacity**Associated Items:** CM 005 Boiler 2: 20% Opacity, EU002, 6-min ave.

EU 002 Power Boiler 2

GP 002 Opacity Monitors

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (Additional requirements are located under the associated GP subject item and in Table B.)	hdr
COMS Calibration Error Audit: due before end of each calendar half-year starting 03/28/2007 for MR021. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-64**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 024 Blr 3 CO**Associated Items:** EU 003 Power Boiler 3

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (Additional requirements are located in Table B.)	hdr
Emissions Monitoring: The owner or operator shall use a CO CEMS to measure EU 003 CO emissions.	Minn. R. 7017.1006
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090
Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. In order for an hour of data to be considered, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour.	Minn. R. 7017.1160, subp. 1 and 2
Quality Assurance Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, section 3. The plan shall include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list.	Minn. R. 7017.1170, subp. 2
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) or 3(B) as applicable, and 40 CFR Section 60.13(d)(1) for each pollutant concentration, each diluent monitor, and for each monitor range. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar half-year following CEM Certification Test, except that a cylinder gas audit (CGA) is not required during any calendar half-year in which a RATA was performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted at least three months apart but no more than eight months apart. A CGA shall be conducted according to the procedures in 40 CFR pt. 60, Appendix F, section 5.1.2. If the monitored emission unit was operated for less than 24 hours during the calendar half-year, a CGA is not required for that calendar half-year.	Minn. R. 7017.1170, subp. 4
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-65**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 025 Blr 3 Mercury**Associated Items:** EU 003 Power Boiler 3

GP 006 Boilers 3 and 4 Mercury Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements: (Additional requirements are located under the Subject Item EU 003 and in Table B.)	hdr
CEMS QA/QC: The owner or operator shall meet the applicable QA/QC requirements in 40 CFR Section 75.80(e) or as approved by the MPCA.	Minn. Stat. 216B.681
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM Certification Test A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs may be conducted using an alternate test method as approved by the MPCA.	40 CFR Section 75.80(e); Minn. R. 7017.1170, subp. 5
Recordkeeping and Recording: Follow the provisions listed under 40 CFR Section 75.84. This requirement is effective beginning January 1, 2009.	Minn. Stat. 216B.681

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-66**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 026 Blr 4 Mercury**Associated Items:** EU 004 Power Boiler 4

GP 006 Boilers 3 and 4 Mercury Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (Additional requirements are found under the Subject Item EU 004 and in Table B)	hdr
CEMS QA/QC: The owner or operator shall meet the applicable QA/QC requirements in 40 CFR Section 75.80(e) or as approved by the MPCA.	Minn. Stat. 216B.681
CEMS Relative Accuracy Test Audit (RATA): due before end of each year starting 03/28/2007 A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs may be conducted using an alternative test method as approved by the MPCA.	40 CFR Section 75.80(e); Minn. R. 7017.1170, subp. 5
Recordkeeping and Recording: Follow the provisions listed under 40 CFR Section 75.84. This requirement is effective beginning January 1, 2009.	Minn. Stat. 216B.681

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-67**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 027 Blr 3 Opacity**Associated Items:** EU 003 Power Boiler 3

GP 002 Opacity Monitors

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (Additional requirements are located under GP 002 in Tables A and B.)	hdr
COMS Calibration Error Audit: due before end of each calendar half-year starting 03/28/2007 for MR 027. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-68**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 028 Blr 1 SO2**Associated Items:** CM 009 Boilers 1, 2 & 3: SO2, 1-hr ave.

EU 001 Power Boiler 1

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
CEM Certification Test: due 60 days after achieving normal operation but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-69**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 029 Blr 1 NOx**Associated Items:** CM 010 Boilers 1 & 2: NOx Title IV

EU 001 Power Boiler 1

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
CEM Certification Test: due 60 days after achieving normal operation but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-70**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 032 Blr 2 SO2**Associated Items:** CM 009 Boilers 1, 2 & 3: SO2, 1-hr ave.

EU 002 Power Boiler 2

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
CEM Certification Test: due 60 days after achieving normal operation but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-71**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 033 Blr 2 NOx**Associated Items:** CM 010 Boilers 1 & 2: NOx Title IV

EU 002 Power Boiler 2

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
CEM Certification Test: due 60 days after achieving normal operation but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-72**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 036 Blr 3 SO2**Associated Items:** CM 009 Boilers 1, 2 & 3: SO2, 1-hr ave.

EU 003 Power Boiler 3

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
CEM Certification Test: due 60 days after achieving normal operation but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-73**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 037 Blr 3 NOx**Associated Items:** CM 008 Boiler 3, Title IV NOx

EU 003 Power Boiler 3

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
CEM Certification Test: due 60 days after achieving normal operation but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-74**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 040 Blr 4 Opacity**Associated Items:** EU 004 Power Boiler 4

GP 002 Opacity Monitors

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (Additional requirements are located under GP 002 in Table A and MR 040 in Table B.)	hdr
COMS Calibration Error Audit: due before end of each calendar half-year starting 02/14/2008 for MR 040. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-75**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 042 Blr 4 SO2**Associated Items:** CM 002 Boiler 4: 1.2 lbs SO2/mmBtu, EU004, 1-hr ave.

EU 004 Power Boiler 4

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (Additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year for MR 042 (Boiler 4 SO2) following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, Section 2.3.1, Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, Section 2.2.1 & Section 2.2.2; Minn. R. 7017.1020

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-76**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 043 Blr 4 NOx**Associated Items:** CM 003 Boiler 4: 0.7 lbs NOx/mmBtu, EU004, 3-hr ave.

EU 004 Power Boiler 4

GP 003 NOx and SO2 Monitors

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (Additional requirements are located under the associated GP subject item and in Table B.)	hdr
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year for MR 043 (Boiler 4 NOx) following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, Section 2.3.1, Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, Section 2.2.1 & Section 2.2.2; Minn. R. 7017.1020

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-77**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Subject Item: MR 045 Blr 4 CO**Associated Items:** CM 011 Boiler 4 CO

EU 004 Power Boiler 4

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (Additional requirements are located in Table B.)	hdr
Emissions Monitoring: The owner or operator shall use a CO CEMS to measure EU 004 CO emissions.	Minn. R. 7017.1006
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for MR 045 Boiler 4 CO CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
CEMS Test Notification and Submittals: CEMS Certification Test Plan: due 30 days before CEMS Certification Test; CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test; CEMS Certification Test Report: due 45 days after CEMS Certification Test; CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test. The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2	Minn. R. 7017.1060, subp. 1-3; and Minn. R. 7017.1080, subp. 1-4
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090
Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. In order for an hour of data to be considered, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour.	Minn. R. 7017.1160, subp. 1 and 2
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS RATA.	Minn. R. 7017.1180, subp. 2
Quality Assurance Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, section 3. The plan shall include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list.	Minn. R. 7017.1170, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-78**

04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) or 3(B) as applicable, and 40 CFR Section 60.13(d)(1) for each pollutant concentration, each diluent monitor, and for each monitor range. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar half-year following CEM Certification Test, except that a cylinder gas audit (CGA) is not required during any calendar half-year in which a RATA was performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted at least three months apart but no more than eight months apart. A CGA shall be conducted according to the procedures in 40 CFR pt. 60, Appendix F, section 5.1.2. If the monitored emission unit was operated for less than 24 hours during the calendar half-year, a CGA is not required for that calendar half-year.	Minn. R. 7017.1170, subp. 4
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130

TABLE B: SUBMITTALS**B-1** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr
Permit Number: 06100004 - 007

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send any application for a permit or permit amendment to:

Fiscal Services
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Fugitive Emissions Control Plan	<p>due 120 days after Permit Issuance. This submittal is a revised Fugitive Emissions Control Plan that incorporates changes to fugitive emission sources due to the Unit #4 (EU 004) air pollution control retrofit authorized by permit No. 06100004-007. The equipment retrofit results in Unit #4 flyash being collected, handled, and disposed of as dry ash instead of as pre-retrofit wet ash. This change must be reflected in the plan.</p> <p>The changes to fugitive emission sources are:</p> <ol style="list-style-type: none"> 1. FS 004 unit 4 flyash storage cell dozer activity and flyash storage cell berm road pickup truck traffic; 2. FS 007 additional truck traffic to transport unit 4 powdered activated carbon, limestone, and flyash; 3. FS 008 additional flyash handling unloading to unit 4 storage cell; 4. FS 009 wind erosion of additional unit 4 flyash. 	Total Facility
Monitoring Plan	<p>due 60 days after Initial Performance Test of EU 004 after installation of CE 030. This submittal is the EU 004 CAM Plan revision to accommodate the installation of CE 030 and removal of CE 004, CE 005, and CE 006.</p> <p>The Permittee may propose opacity (if it is limiting relative to PM emissions) and pressure differential as surrogates for monitoring PM. If the Permittee proposes these monitoring parameters, opacity shall be measured with a COMS and differential pressure shall be measured by a differential pressure gauge.</p>	CE030
Notification of the Date Construction Began	due 15 days after Start Of Construction of CE 030 and CE 031 installation.	EU004
Notification	due 15 days after Initial Startup after completion of CE 030 and CE 031 installation. Initial startup is the first firing of solid fuel in EU 004 after completion of CE 030 and CE 031 installation. This notification shall specify the date that solid fuel is initially fired in EU 004 after completion of installation of CE 030 and CE 031.	EU004
Notification	due 15 days after Install of pavement on the ash haul road.	FS004
Submittal of Permit Application	<p>due 120 days after Initial Performance Test for PM and Fluoride emissions after the EU 004 pollution control equipment retrofit (installation of CE 030 and CE 031).</p> <p>The application must propose EU 004 PM Compliance Assurance Monitoring (CAM) plan revisions, and propose EU 004 CAM plans for PM10, PM2.5, and fluorides.</p>	EU004

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-3** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Testing Frequency Plan	due 60 days after Initial Performance Test for (Front-half) PM emissions after the EU 004 pollution control equipment retrofit (installation of CE 030 and CE 031). The plan shall specify a testing frequency based on the initial performance test results and MPCA guidance. Future performance tests at 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the plan by the MPCA.	EU004
Testing Frequency Plan	due 60 days after Initial Performance Test for Fluoride emissions after the EU 004 pollution control equipment retrofit (installation of CE 030 and CE 031). The plan shall specify a testing frequency based on the initial performance test results and MPCA guidance. Future performance tests at 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the plan by the MPCA.	EU004
Testing Frequency Plan	due 60 days after Initial Performance Test for PM10 emissions after the EU 004 pollution control equipment retrofit (installation of CE 030 and CE 031). The plan shall specify a testing frequency based on the initial performance test results and MPCA guidance. Future performance tests at 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the plan by the MPCA.	EU004
Testing Frequency Plan	due 60 days after Initial Performance Test for PM2.5 emissions after the EU 004 pollution control equipment retrofit (installation of CE 030 and CE 031). The plan shall specify a testing frequency based on the initial performance test results and MPCA guidance. Future performance tests at 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the plan by the MPCA.	EU004

TABLE B: RECURRENT SUBMITTALS**B-4** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

What to send	When to send	Portion of Facility Affected
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar quarter following CEM Certification Test, if a CGA was conducted during the previous calendar quarter.	MR024, MR045
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor. Submit Deviations Reporting Form DRF-1 as amended. The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions. The EER must be submitted even if there were no excess emissions, downtime or bypasses during the quarter.	Total Facility
Linearity Test Results Summary	due 30 days after end of each calendar quarter following CEM Certification Test in which a Linearity and Leak Check Test was conducted.	MR028, MR029, MR032, MR033, MR036, MR037
Linearity Test Results Summary	due 30 days after end of each calendar quarter following Linearity and Leak Check Test (Acid Rain Program), if performed.	MR043
Linearity Test Results Summary	due 30 days after end of each calendar quarter starting 08/19/2010 , if performed on MR 042, Boiler 4 SO2.	MR042
Quarterly Report	due 30 days after end of each calendar quarter starting 01/01/2009 as referenced by 40 CFR Section 75.84(f).	MR026
Quarterly Report	due 30 days after end of each calendar quarter starting 01/01/2009 as required by 40 CFR Section 75.84(f).	MR025
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEM Certification Test in which the CEMS RATA was conducted.	MR028, MR029, MR032, MR033, MR036, MR037
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA)	MR025, MR026
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter starting 07/30/2010 in which a RATA was conducted for MR 045, Boiler 4 CO.	MR045
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter starting 10/03/2006 in which the CEMs RATA was conducted for MR 024, Boiler 3 CO.	MR024
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Certification Test for MR027, Boiler 3 Opacity.	MR027
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year starting 02/04/2008 for MR 040, Boiler 4 Opacity.	MR040
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year starting 03/28/2007 for MR 020, Boiler 1 Opacity.	MR020
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year starting 03/28/2007 for MR 021, Boiler 2 Opacity.	MR021
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar half-year starting 08/19/2010 in which the CEMs RATA was conducted for MR 042, Boiler 4 SO2.	MR042

TABLE B: RECURRENT SUBMITTALS**B-5** 04/15/13

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 007

Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar half-year starting 09/21/2006 in which the CEMs RATA was conducted for MR 043, Boiler 4 NOx.	MR043
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 03/28/2007 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Annual Report	<p>due 60 days after end of each calendar year following Initial Startup of EU 004 after the completion of EU 004 modifications allowed by permit No. 06100004-005. This requirement terminates upon submittal of the fifth required calendar year report following resumption of EU 004 normal operation.</p> <p>The Permittee shall submit an annual report stating the EU 004 SO2 emissions tons for the previous calendar year. The report shall be generated using the same EU 004 SO2 CEMS-based data that is reported to the EPA Clean Air Markets program.</p> <p>If calendar year SO2 emissions exceed 3145 tons (future projected actual emissions plus excludable emissions determined for permit No. 06100004-005, plus 50 percent of the 40 ton per year SO2 significant emission rate), the Permittee shall also submit with the report an explanation of why the calendar year SO2 emissions exceeded 3145 tons.</p>	EU004
Compliance Certification	due 31 days after end of each calendar year starting 03/28/2007 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX A
Insignificant Activities
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

Activity	Rule Citation	Applicable Regulation
Grinders	Minn. R. 7007.1300, subp. 3.D.(2)	Minn. R. 7011.0715
Gasoline Tanks	Minn. R. 7007.1300, subp. 3.E(1)	NA
Welding Equipment	Minn. R. 7007.1300, subp. 3.H(4)	Minn. R. 7011.0715
Sandblasting	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0715
Coal Stockpile loading	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Stockpile, equipment traffic	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Conveyor drop onto stockpile, reclaimer	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Conveyor Drop onto Stockpile –Side Chute	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Rail Car Unloading	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Rail Car Load Out	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Lab Hoods (4)	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0715
Coal Transfer Tower A	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Transfer Tower B	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Conveyor Belt C3	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Rotary Car Dumper	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Rotary Car TP	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Transfer and Sampling House	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0150
Coal Storage Silo	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0715
Coal Tripper Transfer	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0715
#4 Coal Bunker	Minn. R. 7007.1300, subp. 4.B(2)	Minn. R. 7011.0715

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

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*** N01 Itr 2; INL-INL, MN Metdata 1987
**MODELOPTs:
CONC
DFAULT ELEV
*** POINT SOURCE DATA ***
SOURCE      NUMBER EMISSION RATE      BASE   STACK  STACK   STACK   STACK   BLDG  URBAN  CAP/  EMIS RATE
ID          PART.  (GRAMS/SEC)    X      Y      ELEV.  HEIGHT TEMP.  EXIT VEL. DIAMETER EXISTS SOURCE HOR  SCALAR
              CATS.      (METERS) (METERS) (METERS) (METERS) (DEG.K) (M/SEC) (METERS)
-----
BEC_SV03    0    0.11653E+03  450543.2  5234354.5  392.6   192.44  361.48   12.64    8.84    YES    NO    NO
BEC_SV04    0    0.25749E+03  450653.8  5234624.5  394.6   170.31  343.15   35.85    6.10    YES    NO    NO
BEC_SV09    0    0.63000E-01  450631.3  5234411.0  396.2    13.72  699.82   20.21    0.24    YES    NO    NO
BEC_SV10    0    0.60480E+01  450683.1  5234583.0  395.4     8.23  699.82    8.80    0.64    YES    NO    NO
BEC_SV22    0    0.60000E-02  450555.3  5234413.5  394.3     9.14  847.04   10.49    0.20    YES    NO    NO

*** THE SUMMARY OF MAXIMUM PERIOD ( 8760 HRS) RESULTS ***
** CONC OF NOX      IN MICROGRAMS/M**3
GROUP ID      AVERAGE CONC      RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
-----
ALL      1ST HIGHEST VALUE IS      59.05281 AT ( 450572.66, 5234629.00, 392.04, 392.04, 0.00) DC
```

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

*** N04 Itr 2; INL-INL, MN Metdata 1987

*** 18:49:21

**MODELOPTs:

PAGE 2

CONC

DFAULT ELEV

*** POINT SOURCE DATA ***

SOURCE	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BLDG	URBAN	CAP/	EMIS RATE
ID	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SOURCE	HOR	SCALAR
	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)				VARY BY
BEC_SV03	0	0.29590E+02	450543.2	5234354.5	392.6	192.44	329.26	8.50	8.84	YES	NO	NO	
BEC_SV04	0	0.25749E+03	450653.8	5234624.5	394.6	170.31	343.15	35.85	6.10	YES	NO	NO	
BEC_SV09	0	0.63000E-01	450631.3	5234411.0	396.2	13.72	699.82	20.21	0.24	YES	NO	NO	
BEC_SV10	0	0.60480E+01	450683.1	5234583.0	395.4	8.23	699.82	8.80	0.64	YES	NO	NO	
BEC_SV22	0	0.60000E-02	450555.3	5234413.5	394.3	9.14	847.04	10.49	0.20	YES	NO	NO	

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF NOX

IN MICROGRAMS/M**3

**

GROUP ID

AVERAGE CONC

RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)

OF TYPE

GRID-ID

ALL

1ST HIGHEST VALUE IS

59.05276 AT (450572.66, 5234629.00, 392.04, 392.04, 0.00) DC

*** P01 Itr 2; INL-INL, MN Metdata 1990

*** 14:21:08 *

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

**MODELOPTs:

PAGE 2

CONC		DFAULT ELEV				MULTYR							
*** POINT SOURCE DATA ***													
	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BLDG	URBAN	CAP/	EMIS RATE
SOURCE	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SOURCE	HOR	SCALAR
ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)				VARY BY
BEC_SV03	0	0.33695E+02	450543.2	5234354.5	392.6	192.44	361.48	12.64	8.84	YES	NO	NO	
BEC_SV04	0	0.64372E+02	450653.8	5234624.5	394.6	170.31	343.15	35.85	6.10	YES	NO	NO	
BEC_SV09	0	0.78000E-01	450631.3	5234411.0	396.2	13.72	699.82	20.21	0.24	YES	NO	NO	
BEC_SV10	0	0.94000E-01	450683.1	5234583.0	395.4	8.23	699.82	8.80	0.64	YES	NO	NO	
BEC_SV15	0	0.27000E-01	450581.8	5234460.0	394.4	17.98	294.26	0.00	0.15	YES	NO	NO	
BEC_SV16	0	0.43000E-01	450296.8	5234813.5	396.2	46.33	294.26	0.00	0.15	YES	NO	NO	
BEC_SV17	0	0.15000E-01	450303.2	5234810.0	396.2	46.33	294.26	0.00	0.15	YES	NO	NO	
BEC_SV18	0	0.12000E-01	450298.0	5234808.0	396.2	46.33	294.26	0.00	0.15	YES	NO	NO	
BEC_SV20	0	0.18000E-01	450620.7	5234623.5	394.4	17.22	294.26	0.00	1.23	YES	NO	NO	
BEC_SV21	0	0.18000E-01	450617.9	5234627.0	394.4	17.22	294.26	0.00	1.23	YES	NO	NO	
BEC_SV22	0	0.80000E-02	450555.3	5234413.5	394.3	9.14	847.04	10.49	0.20	YES	NO	NO	
BEC_SV23	0	0.25200E+00	450736.8	5234139.0	397.5	6.40	294.26	46.04	1.42	YES	NO	NO	

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF OTHER		IN MICROGRAMS/M**3					**	
GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	7.50431	AT (	450543.22,	5234704.50,	391.86,	391.86,	0.00) DC

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

		** CONC OF OTHER		IN MICROGRAMS/M**3				**	
		DATE						NETWORK	
GROUP ID		AVERAGE CONC	(YYMMDDHH)	RECEPTOR	(XR, YR, ZELEV, ZHILL, ZFLAG)			OF TYPE	GRID-ID

ALL	HIGH 1ST HIGH VALUE IS	61.66373	ON 89112024:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00) DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

HIGH	2ND HIGH VALUE IS	56.72338	ON 90011124:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC
HIGH	3RD HIGH VALUE IS	52.64199c	ON 86011224:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC
HIGH	4TH HIGH VALUE IS	47.35564c	ON 86011224:	AT (	450677.31,	5233790.50,	395.00,	396.24,	0.00)	DC
HIGH	5TH HIGH VALUE IS	34.63295	ON 90041624:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC
HIGH	6TH HIGH VALUE IS	30.75789	ON 89092224:	AT (	450657.31,	5233790.50,	396.03,	396.03,	0.00)	DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

*** P12 Itr 2; INL-INL, MN Metdata 1990											02:18:27 *			
**MODELOPTs:													PAGE	2
CONC	DFAULT ELEV					MULTYR								
*** POINT SOURCE DATA ***														
	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BLDG	URBAN	CAP/	EMIS RATE	
SOURCE	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SOURCE	HOR	SCALAR	
ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)				VARY BY	

BEC_SV01	0	0.47250E+01	450572.1	5234322.5	394.8	76.20	394.26	10.57	2.90	YES	NO	NO		
BEC_SV03	0	0.73980E+01	450543.2	5234354.5	392.6	192.44	305.37	4.25	8.84	YES	NO	NO		
BEC_SV04	0	0.32186E+02	450653.8	5234624.5	394.6	170.31	330.37	17.92	6.10	YES	NO	NO		
BEC_SV15	0	0.27000E-01	450581.8	5234460.0	394.4	17.98	294.26	0.00	0.15	YES	NO	NO		
BEC_SV16	0	0.43000E-01	450296.8	5234813.5	396.2	46.33	294.26	0.00	0.15	YES	NO	NO		
BEC_SV17	0	0.15000E-01	450303.2	5234810.0	396.2	46.33	294.26	0.00	0.15	YES	NO	NO		
BEC_SV18	0	0.12000E-01	450298.0	5234808.0	396.2	46.33	294.26	0.00	0.15	YES	NO	NO		
BEC_SV20	0	0.18000E-01	450620.7	5234623.5	394.4	17.22	294.26	0.00	1.23	YES	NO	NO		
BEC_SV21	0	0.18000E-01	450617.9	5234627.0	394.4	17.22	294.26	0.00	1.23	YES	NO	NO		
BEC_SV23	0	0.25200E+00	450736.8	5234139.0	397.5	6.40	294.26	46.04	1.42	YES	NO	NO		
*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***														
** CONC OF OTHER IN MICROGRAMS/M**3 **														
GROUP ID	AVERAGE CONC				RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	GRID-ID			

ALL	1ST HIGHEST VALUE IS		7.54244	AT (	450543.22,	5234704.50,	391.86,	391.86,	0.00)	DC			
*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***														
** CONC OF OTHER IN MICROGRAMS/M**3 **														
DATE NETWORK														
GROUP ID	AVERAGE CONC				(YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	GRID-ID		

ALL	HIGH	1ST HIGH VALUE IS		62.38565	ON 89112024: AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC		
	HIGH	2ND HIGH VALUE IS		56.71721	ON 90011124: AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC		

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

HIGH	3RD HIGH VALUE IS	54.43631c	ON 86011224:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC
HIGH	4TH HIGH VALUE IS	49.72771	ON 89050524:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC
HIGH	5TH HIGH VALUE IS	34.65719	ON 90041624:	AT (	450687.31,	5233790.50,	394.96,	394.96,	0.00)	DC
HIGH	6TH HIGH VALUE IS	31.19517	ON 89092224:	AT (	450667.31,	5233790.50,	395.46,	395.46,	0.00)	DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

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*** S01 Annual Itr 2; INL-INL, MN Metdata 1987
**MODELOPTs:
CONC                                DFAULT ELEV
*** POINT SOURCE DATA ***
SOURCE      NUMBER EMISSION RATE      BASE   STACK  STACK   STACK   STACK   BLDG  URBAN  CAP/  EMIS RATE
ID          PART.  (GRAMS/SEC)      X       Y       ELEV.  HEIGHT TEMP.  EXIT VEL. DIAMETER EXISTS SOURCE HOR  SCALAR
          CATS.      (METERS) (METERS) (METERS) (METERS) (DEG.K) (M/SEC) (METERS)
-----
BEC_SV03    0    0.79403E+03  450543.2  5234354.5  392.6   192.44  361.48   12.64    8.84    YES    NO    NO
BEC_SV04    0    0.21243E+03  450653.8  5234624.5  394.6   170.31  343.15   35.85    6.10    YES    NO    NO
BEC_SV09    0    0.70000E-02  450631.3  5234411.0  396.2    13.72  699.82   20.21    0.24    YES    NO    NO
BEC_SV10    0    0.94500E+00  450683.1  5234583.0  395.4     8.23  699.82    8.80    0.64    YES    NO    NO
BEC_SV22    0    0.20000E-02  450555.3  5234413.5  394.3     9.14  847.04   10.49    0.20    YES    NO    NO

*** THE SUMMARY OF MAXIMUM PERIOD ( 8760 HRS) RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3      **
GROUP ID      AVERAGE CONC      RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
-----
ALL      1ST HIGHEST VALUE IS      9.22156 AT ( 450572.66, 5234629.00, 392.04, 392.04, 0.00) DC
```


APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

*** S01 Short-term Itr 2; INL-INL, MN Metdata 1989

*** 22:23:50

**MODELOPTs:

PAGE 2

CONC

DFAULT ELEV

*** POINT SOURCE DATA ***

SOURCE	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BLDG	URBAN	CAP/	EMIS RATE
ID	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SOURCE	HOR	SCALAR
	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)				VARY BY
BEC_SV03	0	0.24469E+04	450543.2	5234354.5	392.6	192.44	361.48	12.64	8.84	YES	NO	NO	
BEC_SV04	0	0.77246E+03	450653.8	5234624.5	394.6	170.31	343.15	35.85	6.10	YES	NO	NO	
BEC_SV09	0	0.12600E+00	450631.3	5234411.0	396.2	13.72	699.82	20.21	0.24	YES	NO	NO	
BEC_SV10	0	0.94500E+00	450683.1	5234583.0	395.4	8.23	699.82	8.80	0.64	YES	NO	NO	
BEC_SV22	0	0.35000E-01	450555.3	5234413.5	394.3	9.14	847.04	10.49	0.20	YES	NO	NO	

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

GROUP	ID		AVERAGE CONC	DATE	RECEPTOR	(XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK			
				(YYMMDDHH)			OF TYPE GRID-ID			
ALL	HIGH	1ST HIGH VALUE IS	796.42310	ON 89032314:	AT (449175.12,	5238113.50,	392.89,	392.89,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	548.07581	ON 89032314:	AT (449935.44,	5237801.50,	392.58,	392.58,	0.00)	DC

*** THE SUMMARY OF HIGHEST 3-HR RESULTS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

GROUP	ID		AVERAGE CONC	DATE	RECEPTOR	(XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK			
				(YYMMDDHH)			OF TYPE GRID-ID			
ALL	HIGH	1ST HIGH VALUE IS	456.37442	ON 89071812:	AT (450334.84,	5233172.50,	390.14,	390.14,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	424.45447	ON 89071412:	AT (450334.84,	5233172.50,	390.14,	390.14,	0.00)	DC

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

APPENDIX B-1
Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

GROUP ID		AVERAGE CONC		DATE (YYMMDDHH)		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				NETWORK OF TYPE GRID-ID	
ALL	HIGH	1ST HIGH VALUE IS	179.11818c	ON 87070824:	AT (	450300.12,	5232976.00,	390.40,	390.40,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	157.92535	ON 87071224:	AT (	450230.66,	5232582.00,	390.14,	390.14,	0.00)	DC

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)
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GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS 3.70379 AT (452275.28, 5233354.50, 388.01, 388.01,	0.00)	DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

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*** S02 Short-term Itr 2; INL-INL, MN Metdata 1989 *** 23:50:43
**MODELOPTs: PAGE 2
CONC          DFAULT ELEV

*** POINT SOURCE DATA ***
SOURCE      NUMBER EMISSION RATE      BASE  STACK  STACK  STACK  STACK  BLDG  URBAN  CAP/  EMIS RATE
PART.  (GRAMS/SEC)  X      Y      ELEV.  HEIGHT  TEMP.  EXIT VEL.  DIAMETER  EXISTS SOURCE HOR  SCALAR
ID      CATS.      (METERS) (METERS) (METERS) (METERS) (DEG.K) (M/SEC) (METERS)          VARY BY
-----
BEC_SV03    0    0.18352E+04  450543.2  5234354.5  392.6   192.44  355.37    9.48    8.84    YES    NO    NO
BEC_SV04    0    0.57935E+03  450653.8  5234624.5  394.6   170.31  338.71   26.89    6.10    YES    NO    NO

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3      **
DATE
GROUP ID      AVERAGE CONC      (YYMMDDHH)      RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)      NETWORK
OF TYPE GRID-ID
-----
ALL      HIGH  1ST HIGH VALUE IS      725.31946 ON 89032314: AT ( 449346.16, 5237643.50, 392.58, 392.58, 0.00) DC
HIGH  2ND HIGH VALUE IS      468.49081 ON 89032713: AT ( 450022.28, 5237309.00, 392.28, 392.28, 0.00) DC

*** THE SUMMARY OF HIGHEST 3-HR RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3      **
DATE
GROUP ID      AVERAGE CONC      (YYMMDDHH)      RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)      NETWORK
OF TYPE GRID-ID
-----
ALL      HIGH  1ST HIGH VALUE IS      420.11865 ON 89072012: AT ( 450751.59, 5233172.50, 388.01, 388.01, 0.00) DC
HIGH  2ND HIGH VALUE IS      387.68100 ON 89071412: AT ( 450334.84, 5233172.50, 390.14, 390.14, 0.00) DC

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3      **
DATE
GROUP ID      AVERAGE CONC      (YYMMDDHH)      RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)      NETWORK
OF TYPE GRID-ID
-----
```

APPENDIX B-1
Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

ALL	HIGH	1ST HIGH VALUE IS	163.01523c	ON 87070724:	AT (	450543.22,	5232954.50,	389.84,	389.84,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	139.78828c	ON 87082724:	AT (	450334.84,	5233172.50,	390.14,	390.14,	0.00)	DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

*** S04 Annual Itr 2; INL-INL, MN Metdata 1987

*** 00:21:47

**MODELOPTs:

PAGE 2

CONC

DFAULT ELEV

*** POINT SOURCE DATA ***

SOURCE	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BLDG	URBAN	CAP/	EMIS RATE
ID	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SOURCE	HOR	SCALAR
	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)				VARY BY
BEC_SV03	0	0.38045E+02	450543.2	5234354.5	392.6	192.44	329.26	8.50	8.84	YES	NO	NO	
BEC_SV04	0	0.21243E+03	450653.8	5234624.5	394.6	170.31	343.15	35.85	6.10	YES	NO	NO	
BEC_SV09	0	0.70000E-02	450631.3	5234411.0	396.2	13.72	699.82	20.21	0.24	YES	NO	NO	
BEC_SV10	0	0.94500E+00	450683.1	5234583.0	395.4	8.23	699.82	8.80	0.64	YES	NO	NO	
BEC_SV22	0	0.20000E-02	450555.3	5234413.5	394.3	9.14	847.04	10.49	0.20	YES	NO	NO	

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF SO2

IN MICROGRAMS/M**3

**

GROUP ID

AVERAGE CONC

RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)

OF TYPE

GRID-ID

ALL 1ST HIGHEST VALUE IS 9.22035 AT (450572.66, 5234629.00, 392.04, 392.04, 0.00) DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

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*** S04 Short-term Itr 2; INL-INL, MN Metdata 1987 *** 01:51:37
**MODELOPTs: PAGE 2
CONC DFAULT ELEV

*** POINT SOURCE DATA ***

SOURCE      NUMBER EMISSION RATE      BASE      STACK      STACK      STACK      STACK      BLDG  URBAN  CAP/  EMIS RATE
ID          PART.  (GRAMS/SEC)      X          Y          ELEV.      HEIGHT     TEMP.      EXIT VEL.  DIAMETER  EXISTS SOURCE HOR  SCALAR
          CATS.      (METERS) (METERS) (METERS) (METERS) (DEG.K)  (M/SEC)  (METERS)
-----
BEC_SV03    0    0.12555E+04  450543.2  5234354.5  392.6    192.44    329.26     8.50     8.84    YES    NO    NO
BEC_SV04    0    0.77246E+03  450653.8  5234624.5  394.6    170.31    343.15    35.85     6.10    YES    NO    NO
BEC_SV09    0    0.12600E+00  450631.3  5234411.0  396.2     13.72    699.82    20.21     0.24    YES    NO    NO
BEC_SV10    0    0.94500E+00  450683.1  5234583.0  395.4      8.23    699.82     8.80     0.64    YES    NO    NO
BEC_SV22    0    0.35000E-01  450555.3  5234413.5  394.3      9.14    847.04    10.49     0.20    YES    NO    NO

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3 **
DATE
GROUP ID      AVERAGE CONC      (YYMMDDHH)      RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)      OF TYPE  GRID-ID
-----
ALL      HIGH  1ST HIGH VALUE IS      688.04608  ON 87112214: AT (  450543.22,  5237354.50,  392.88,  392.88,  0.00)  DC
ALL      HIGH  2ND HIGH VALUE IS      427.86185  ON 87072815: AT (  449943.22,  5233315.50,  388.01,  388.01,  0.00)  DC

*** THE SUMMARY OF HIGHEST 3-HR RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3 **
DATE
GROUP ID      AVERAGE CONC      (YYMMDDHH)      RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)      OF TYPE  GRID-ID
-----
ALL      HIGH  1ST HIGH VALUE IS      398.49915  ON 89072012: AT (  450716.88,  5233369.50,  388.01,  388.01,  0.00)  DC
ALL      HIGH  2ND HIGH VALUE IS      363.01028  ON 89071412: AT (  450369.56,  5233369.50,  388.01,  388.01,  0.00)  DC

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***
** CONC OF SO2      IN MICROGRAMS/M**3 **
```

APPENDIX B-1
Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

GROUP ID		AVERAGE CONC		DATE (YYMMDDHH)		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				NETWORK OF TYPE GRID-ID	
ALL	HIGH	1ST HIGH VALUE IS	155.74730c	ON 87070724:	AT (	450543.22,	5232954.50,	389.84,	389.84,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	132.83893c	ON 87082724:	AT (	450334.84,	5233172.50,	390.14,	390.14,	0.00)	DC

APPENDIX B-1

Dispersion Modeling Parameters (From modeling conducted for permit No. 06100004-004)

Minnesota Power - Boswell Energy Center

Permit Number: 06100004-007

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*** AERMOD - VERSION 07026 ***      *** 0959-20 MN Power - Boswell Energy Center      ***      08/14/08
*** CO AERMOD Modeling; INL-INL, MN Metdata 1986      ***      16:34:23
**MODELOPTs:                                     PAGE 2
CONC                                DFAULT ELEV

*** POINT SOURCE DATA ***
SOURCE  NUMBER  EMISSION RATE      BASE  STACK  STACK  STACK  STACK  BLDG  URBAN  CAP/  EMIS RATE
ID      PART.   (GRAMS/SEC)    X      Y      ELEV.  HEIGHT TEMP.  EXIT VEL.  DIAMETER  EXISTS SOURCE HOR  SCALAR
-----
BEC_SV03  0    0.63408E+03  450543.2  5234354.5  392.6   192.44  329.26   8.50    8.84    YES   NO   NO
BEC_SV22  0    0.25000E+00  450519.0  5234415.0  394.3    9.14   772.59  22.92    0.25    YES   NO   NO
```

APPENDIX B-2**Dispersion Modeling Parameters For BEC4 CO Emissions** (Modeling conducted for permit No. 06100004-005)**Minnesota Power - Boswell Energy Center****Permit Number: 06100004-007**

Air Dispersion Modeling Point Source Parameters for MN Power – Boswell Energy Center (All Ave. Times)								
SRCID	X Coord.	Y Coord.	Elev.	Emis. Rate	Stack Height	Temp	Exit Velocity	Stack Diameter
	m	m	m	g/s	m	K	m/s	m
BEC_SV04	450,653.8	5,234,624.3	394.59	1210.67	170.31	343.15	35.85	6.10

APPENDIX C
Acid Rain Program Forms and Requirements
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

Phase II NOx Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

This submission is: ☒ New (*Renewal*) ☐ Revised

Step 1 Indicate plant name, State, and ORIS code from NADB, if applicable	Clay Boswell Plant Name	MN State	1893 ORIS Code
---	--------------------------------	-----------------	-----------------------

Step 2 Identify each affected Group 1 and Group 2 boiler using the boiler ID# from NADB, if applicable. Indicate boiler type: "CB" for cell burner, "CY" for cyclone, "DBW" for dry bottom wall-fired, "T" for tangentially fired, "V" for vertically fired, and "WB" for wet bottom. Indicate the compliance option selected for each unit

ID# 1	ID# 2	ID# 3	ID# 4	ID#	ID#
DBW	DBW	T	T		
Type	Type	Type	Type	Type	Type

(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for <u>Phase I</u> dry bottom wall-fired boilers)						
(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for <u>Phase I</u> tangentially fired boilers)						
(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)						

APPENDIX C
Acid Rain Program Forms and Requirements
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

(d) Standard annual average emission limitation of 0.46 lb/mmBtu (for Phase II dry bottom wall-fired boilers)						
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)						
(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)						
(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)						
(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)						
(i) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)						
(j) NOx Averaging Plan (include NOx Averaging form)	X	X	X	X		
(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack)						

APPENDIX C
Acid Rain Program Forms and Requirements
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

(l) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO_x Averaging (check the NO_x Averaging Plan box and include NO_x Averaging form)	X	X				
(m) EPA-approved common stack apportionment method pursuant to 40 CFR 75.17 (a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)						
(n) AEL (include Phase II AEL Demonstration Period, Final AEL Petition, or AEL Renewal form as appropriate)						
(o) Petition for AEL demonstration period or final AEL under review by U.S. EPA or demonstration period ongoing						
(p) Repowering extension plan approved or under review						

Standard Requirements

General. This source is subject to the standard requirements in 40 CFR 72.9 (consistent with 40 CFR 76.8(e)(1)(i)). These requirements are listed in this source's Acid Rain Permit.

Special Provisions for Early Election Units

Nitrogen Oxides. A unit that is governed by an approved early election plan shall be subject to an emissions limitation for NO_x as provided under 40 CFR 76.8(a)(2) except as provided under 40 CFR 76.8(e)(3)(iii).

Liability. The owners and operators of a unit governed by an approved early election plan shall be liable for any violation of the plan or 40 CFR 76.8 at that unit. The owners and operators shall be liable, beginning January 1, 2000, for fulfilling the obligations specified in 40 CFR Part 77.

Termination. An approved early election plan shall be in effect only until the earlier of January 1, 2008 or January 1 of the calendar year for which a termination of the plan takes effect. If the designated representative of the unit under an approved early election plan fails to demonstrate compliance with the applicable emissions limitation under 40 CFR 76.5 for any year during the period beginning January 1 of the first year the early election takes effect and ending December 31, 2007, the permitting authority will terminate the plan. The termination will take effect beginning January 1 of the year after the year for which there is a failure to demonstrate compliance, and the designated representative may not submit a new early election plan. The designated representative of the unit under an approved early election plan may terminate the plan any year prior to 2008 but may not submit a new early election plan. In order to terminate the plan, the designated representative must submit a notice under 40 CFR 72.40(d) by January 1 of the year for which the termination is to take effect. If an early election plan is terminated any year prior to 2000, the unit shall meet, beginning January 1, 2000, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7. If an early election plan is terminated on or after 2000, the unit shall meet, beginning on the effective date of the termination, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7.

APPENDIX C
Acid Rain Program Forms and Requirements
Minnesota Power - Boswell Energy Center
Permit Number: 06100004-007

Phase II NOx Averaging Plan

For more information, see instructions and refer to 40 CFR 76.11

This submission is: New ☐ ☒ Revised

Step 1

Identify the units participating in this averaging plan by plant name, State, and boiler ID# from NADB. In column (a), fill in each unit's applicable emission limitation from 40 CFR 76.5, 76.6, or 76.7. In column (b), assign an alternative contemporaneous annual emissions limitation in lb/mmBtu to each unit. In column (c), assign an annual heat input limitation in mmBtu to each unit. Continue to page 3 if necessary.

Plant Name	State	ID#	(a) Emission Limitation	(b) Alt. Contemp. Emission Limitation	(c) Annual Heat Input Limit
Clay Boswell	MN	1	0.46	0.45	3,500,000
Clay Boswell	MN	2	0.46	0.45	3,500,000
Clay Boswell	MN	3	0.40	0.39	19,000,000
Clay Boswell	MN	4	0.40	0.35	33,000,000
Syl Laskin	MN	1	0.40	0.50	4,600,000
Syl Laskin	MN	2	0.40	0.50	4,600,000
Taconite Harbor	MN	1	0.40	0.45	5,600,000
Taconite Harbor	MN	2	0.40	0.45	5,600,000
Taconite Harbor	MN	3	0.40	0.45	5,600,000

Step 2

Use the formula to enter the Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan and the Btu-weighted annual average emission rate for the same units if they are operated in compliance with 40 CFR 76.5, 76.6, or 76.7. The former must be less than or equal to the latter.

Btu-weighted annual emission rate
averaged over the units if they are
operated in accordance with the
proposed averaging plan

Btu-weighted annual average
emission rate for same units
operated in compliance with
40 CFR 76.5, 76.6, or 76.7

0.40

0.40

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$$\frac{\sum_{i=1}^n (R_{Li} \times HI_i)}{\sum_{i=1}^n HI_i} \leq \frac{\sum_{i=1}^n [R_{li} \times HI_i]}{\sum_{i=1}^n HI_i}$$

Where,

R_{Li} = Alternative contemporaneous annual emission limitation unit i, in lb/mmBtu, as specified in column (b) of Step 1:

R_{li} = Applicable emission limitation for unit i, in lb/mmBtu, as specified in column (a) of Step 1:

HI_i = Annual heat input for unit i, in mmBtu, as specified in column (c) of Step 1:

n = Number of units in the averaging plan

☒ This plan is effective for calendar year 2008 through calendar year 2012 unless notification to terminate the plan is given.

☐ Treat this plan as ☐ identical plans, each effective for one calendar year for the following calendar years _____, _____, _____, _____, and _____ unless notification to terminate one or more of these plans is given.

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Special Provisions

Emission Limitations

Each affected unit in an approved averaging plan is in compliance with the Acid Rain emission limitation for NO_x under the plan only if the following requirements are met:

- (i) For each unit, the unit's actual annual average emission rate for the calendar year, in lb/mmBtu, is less than or equal to its alternative contemporaneous annual emission limitation in the averaging plan, and
 - (a) For each unit with an alternative contemporaneous emission limitation less stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year does not exceed the annual heat input limit in the averaging plan,
 - (b) For each unit with an alternative contemporaneous emission limitation more stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year is not less than the annual heat input limit in the averaging plan, or
- (ii) If one or more of the units does not meet the requirements of (i), the designated representative shall demonstrate, in accordance with 40 CFR 76.11(d)(1)(ii)(A) and (B), that the actual Btu-weighted annual average emission rate for the units in the plan is less than or equal to the Btu-weighted annual average rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emission limitations in 40 CFR 76.5, 76.6, or 76.7.
- (iii) If there is a successful group showing of compliance under 40 CFR 76.11(d)(1)(ii)(A) and (B) for a calendar year, then all units in the averaging plan shall be deemed to be in compliance for that year with their alternative contemporaneous emission limitations and annual heat input limits under (i).

Liability

The owners and operators of a unit governed by an approved averaging plan shall be liable for any violation of the plan or this section at that unit or any other unit in the plan, including liability for fulfilling the obligations specified in part 77 of this chapter and sections 113 and 411 of the Act.

Termination

The designated representative may submit a notification to terminate an approved averaging plan, in accordance with 40 CFR 72.40(d), no later than October 1 of the calendar year for which the plan is to be terminated.

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Phase II Permit Application

For more information, see instructions and refer to 40 CFR 72.30 and 72.31

This submission is ☒ New ☐ Revised

Clay Boswell	MN	1893
Plant Name	State	ORIS Code

Compliance
Plan

a Boiler ID#	b Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)	c Repowering Plan	d New Units Commence Operation Date	e New Units Monitor Certification Deadline
1	Yes	no		
2	Yes	no		
3	Yes	no		
4	Yes	no		
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			
	Yes			

Standard Requirements

Permit Requirements.

(1) The designated representative of each affected source and each affected unit at the source shall:

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- (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
 - (ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;
- (2) The owners and operators of each affected source and each affected unit at the source shall:
 - (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and
 - (ii) Have an Acid Rain Permit.

Monitoring Requirements.

- (1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR parts 74, 75, and 76.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR parts 74 and 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements.

- (1) The owners and operators of each source and each affected unit at the source shall:
 - (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
 - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
- (3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
 - (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
 - (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1)(i) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements. The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements.

- (1) The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
- (2) The owners and operators of an affected unit that has excess emissions in any calendar year shall:
 - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
 - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements.

- (1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
 - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
 - (ii) All emissions monitoring information, in accordance with 40 CFR part 75;

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(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,

(iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

(2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability.

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or a written exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.

(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.

(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.

(4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.

(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.

(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans) and 40 CFR 76.11 (NO_x averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.

(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities. No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or a written exemption under 40 CFR 72.7 or 72.8 shall be construed as:

(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;

(2) Limiting the number of allowances a unit can hold; provided, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;

(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;

(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,

(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.