

**AIR EMISSION PERMIT NO. 06100004- 002
IS ISSUED TO**

Minnesota Power Inc.
The Wisconsin Public Power Inc. System

MINNESOTA POWER - BOSWELL ENERGY
P.O. Box 128
Cohasset, Itasca County, Minnesota 557214763

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Total Facility Operating Permit	09/15/95
Major Amendment	12/23/97

This permit authorizes the Permittee to operate 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 as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type:	Federal ; Part 70, Phase II Acid Rain	Major Amendment
Issue Date:	March 24, 1997	Issue Date: March 5, 1999
Expiration:	March 24, 2002	
	All Title I Conditions do not expire.	

Michael J. Sandusky
Division Manager
Air Quality Division

for Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

DKZ:lao

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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	(612)296-6300
Outside Metro Area	1-800-657-3864
TTY	(612)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. Certain requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to:

The state noise pollution control rules, Minn. R. ch. 7030.

FACILITY DESCRIPTION:

The Boswell Energy Center is an electric generating facility located adjacent to the Mississippi River in Cohasset, Minnesota. This electric power facility contains steam generating boilers, emergency generators, cooling towers, coal receiving, handling, and storage facilities, and ash handling and storage capabilities. The boilers are coal-fired and have a combined net generating capacity of approximately 1025 megawatts.

The focus of this amendment is the addition of the Nitrogen Oxides (NO_x) requirements to the Phase II Acid Rain portion of the Title V operating permit. The requirements state that power Boilers 1, 2, and 4 shall limit NO_x emissions in a manner consistent with the NO_x averaging plan application (see attached) and that power boiler 3 shall limit the NO_x emission to 0.45 lbs/MMBtu, consistent with 40 CFR § 76.8 and 40 CFR 76.5(a). A few administrative changes were made to the permit to bring it current with the latest rule change. The administrative changes consist of wording amendments to the Shutdown, Breakdown and Deviations Endangering Human Health language on the Total Facility pages and the opacity language for each boiler subject to only the state opacity rule. This amendment also deletes the acid and alkaline fallout requirement in the Total Facility section due to the recent repeal of the rule.

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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
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.	Minn. R. 7007.0800, subp. 2
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	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.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
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, such as for system breakdowns, repairs, calibration checks, and zero and span adjustments (as applicable). Monitoring records should reflect any such periods of process shutdown.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
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)
For all baghouse controlling emissions from solid fuel handling equipment: 1. Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting. 2. Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting. 3. Check visible emissions once every 48 hours. If visible emissions exist, inspect equipment for evidence of malfunction, including broken bags. Record the results of the inspection, and any corrective action taken.	Minn. R. 7007.0800, subp. 2
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 ensure that the emissions increase from the addition of the fuel type is less than significant as defined by 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2
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
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

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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 Fees: due 60 days after receipt of an MPCA bill	Minn. R. 7002.0005 through Minn. R. 7002.0095
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)
Record keeping: 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)
Record keeping: 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)
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)
Comply with general conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
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

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

<p>The following does not apply to Boilers No. 001, 002, 003, and 004. These units contain specific operating and/or production limits requirements..</p> <p>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.</p>	Minn. R. 7017.2025
<p>Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.</p>	Minn. R. ch. 7017

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: GP 001 SV003 and SV004**Associated Items:** SV 003

SV 004

What to do	Why to do it
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
Individually measure and record the SO ₂ emission rates in lb/MMBtu on a one-hour basis from SV 003 using the SO ₂ CEM on SV 003, and from SV 004 using the SO ₂ CEM on SV 004. The Permittee shall use the SO ₂ CEMs data to determine compliance with the GP 001 sulfur dioxide emission limits.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: SV 003**Associated Items:** EU 001 Power Boiler 1

EU 002 Power Boiler 2

EU 003 Power Boiler 3

GP 001 SV003 and SV004

What to do	Why to do it
Sulfur Dioxide: less than or equal to 4.0 lbs/million BTU heat input using 1 Hour Average when EU 001 and EU 002 are not vented through SV 001. See requirements under EU 001, EU 002, and EU 003 for SO ₂ emission limits that apply when EU 001 and EU 002 are vented through SV 001.	Minn. R. 7009.0020
The Permittee shall use data from the SO ₂ CEM on SV003 to determine compliance with applicable SO ₂ emission limits.	Minn. R. 7007.0800, subp. 2
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
Linearity and Leak Check Test (Acid Rain Program): due before end of each calendar quarter following CEM Certification Test in accordance with 40 CFR pt. 75. Conduct quarterly linearity test 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 2.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test (or due each year, depending on the results of the previous test). Conduct RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. If the RATA results indicate a relative accuracy of 7.5% or less, the next RATA is not required for twelve months.	40 CFR Section 75.4(b)
Recordkeeping: Maintain 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. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: SV 004**Associated Items:** EU 004 Power Boiler 4

GP 001 SV003 and SV004

What to do	Why to do it
Maintain SV 004 exit flue gas temperature at a minimum of 135 degrees F.	Minn. R. 7011.0400
Measure and record SV 004 exit flue gas temperature on an hourly basis. Maintain all records for at least five years from the date of recording.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
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
Linearity and Leak Check Test (Acid Rain Program): due before end of each calendar quarter following CEM Certification Test in accordance with 40 CFR pt. 75. Conduct quarterly linearity test 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 2.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test (or due each year, depending on the results of the previous test). Conduct RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. If the RATA results indicate a relative accuracy of 7.5% or less, the next RATA is not required for twelve months.	40 CFR Section 75.4(b)
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds the specification of PS-1 of 40 CFR 60, Appendix B.	Minn. R. 7017.1000; Minn. R. 7007.0800, subp. 2; 40 CFR Section 60.13(d)
COMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all COMS shall be in continuous operation.	Minn. R. 7007.0800, subp. 2
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to six-minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the six-minute averaging period.	Minn. R. 7007.0800, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7007.0800, subp. 2
Calibrate, maintain, and operate continuous monitoring systems for measuring opacity, sulfur dioxide, and nitrogen oxides emissions, and either O2 or CO2. The sulfur dioxide emission rate shall be calculated on an hourly basis, and the nitrogen oxides emission rate shall be calculated on a 30-day rolling average.	40 CFR Section 60.45(a)
Use the conversion procedures under 60.45(e) to convert the monitoring data into lb/mmBtu.	40 CFR Section 60.45
Recordkeeping: Keep on site at the source each of the following documents for a period of 5 years from the date of permit issuance: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.	40 CFR Section 72.9(f)(l)
Recordkeeping: The owner or operator must retain records of all COMS/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. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

MR 001

MR 002

MR 003

MR 004

MR 017

SV 001

SV 003

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.1 lbs/million BTU heat input	Title I condition: 40 CFR Section 52.21 PSD permit application and ambient air impacts analysis; ensures compliance with 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
Sulfur Dioxide: less than or equal to 4.0 lbs/million BTU heat input using 3 Hour Average period 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
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
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)
NOx Averaging Plan Beginning January 1, 2000 either: Maintain an annual average NOx emission rate of 0.50 lbs/MMBtu and limit the annual heat input to less than or equal to 4,500,000 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, 4 Syl Laskin 1, 2	40 CFR Section 76.11
Application for NOx limits: Submit a complete permit application and compliance plan for NOx emissions in accordance with 40 CFR Section 76.9.	40 CFR Section 76.9(b)(2)
Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, used oil, and oily paper-based floor dry.	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
The owner or operator shall measure opacity, and all SO ₂ , NO _x , and CO ₂ emissions for each affected unit in accordance with 40 CFR Section 75.10.	40 CFR Section 75.10

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Vendor Certifications when emissions are vented through SV 001: For all coal burned in EU 001 when emissions are vented through SV 001, maintain coal vendor information on-site that documents coal sulfur content in percent by weight, and heat content in Btu per pound. Records shall be maintained for a minimum of five years and include calculations that convert heat and sulfur content data, to EU 001 SO ₂ emissions in lb/mmBtu. The calculated SO ₂ emission rate shall be used to determine compliance with the applicable SO ₂ emission limit.	Minn. R. 7007.0800, subp. 2
Initial Performance Test: due 180 days after Permit Issuance to determine compliance with the Title I condition particulate matter emission limit.	Title I Condition: to demonstrate compliance with the particulate matter emission limit set under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test: due before end of each 60 months following Initial Performance Test 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: to demonstrate compliance with the particulate matter emission limit set under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 60 months following Initial Performance Test (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4
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.
The Permittee shall use data from the COM (Continuous Opacity Monitor) on EU 001 to determine compliance with the opacity limit in Minn. R. 7011.0510, subp. 2.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to one-minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the one-minute averaging period.	Minn. R. 7007.0800, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7007.0800, subp. 2
COMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all COMS shall be in continuous operation.	Minn. R. 7007.0800, subp. 2
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds the specification of PS-1 of 40 CFR 60, Appendix B.	Minn. R. 7017.1000; Minn. R. 7007.0800, subp. 2
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. 7007.0800, subp. 5
Recordkeeping: Keep on site at the source each of the following documents for a period of 5 years from the date the document is created: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.	40 CFR Section 72.9(f)(l)
Maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records.	Minn. R. 7007.0800, subp. 5
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	Minn. R. 7007.0800, subp. 5
Apply for Acid Rain Program Permit reissuance: The designated representative or the alternate designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).	40 CFR Section 72.30(c)
Certify Acid Rain Program submittals. Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative or the alternate designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.	40 CFR Section 72.21
Hold allowances as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year. Takes effect for years beginning January 1, 2000. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9(g)(4)

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: EU 002 Power Boiler 2

Associated Items: CE 002 Fabric Filter - High Temperature, i.e., T>250 Degrees F

MR 009

MR 010

MR 011

MR 012

MR 018

SV 001

SV 003

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.1 lbs/million BTU heat input	Title I condition: 40 CFR Section 52.21 PSD permit application and ambient air impacts analysis; ensures compliance with 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
Sulfur Dioxide: less than or equal to 4.0 lbs/million BTU heat input using 3 Hour Average period 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
When EU 002 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
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)
NOx Averaging Plan Beginning January 1, 2000 either: Maintain an annual average NOx emission rate of 0.50 lbs/MMBtu and limit the annual heat input to less than or equal to 4,500,000 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, 4 Syl Laskin 1, 2	40 CFR Section 76.11
Application for NOx limits: Submit a complete permit application and compliance plan for NOx emissions in accordance with 40 CFR Section 76.9.	40 CFR Section 76.9(b)(2)
Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, used oil, and oily paper-based floor dry.	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
The owner or operator shall measure opacity, and all SO2, NOx, and CO2 emissions for each affected unit in accordance with 40 CFR Section 75.10.	40 CFR Section 75.10

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Vendor Certifications when emissions are vented through SV 001: For all coal burned in EU 002 when emissions are vented through SV 001, maintain coal vendor information on-site that documents coal sulfur content in percent by weight, and heat content in Btu per pound. Records shall be maintained for a minimum of five years and include calculations that convert heat and sulfur content data, to EU 002 SO2 emissions in lb/mmBtu. The calculated SO2 emission rate shall be used to determine compliance with the applicable SO2 emission limit.	Minn. R. 7007.0800, subp. 2
Initial Performance Test: due 180 days after Permit Issuance to determine compliance with the Title I condition particulate matter emission limit.	Title I Condition: to demonstrate compliance with the particulate emission limit set under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test: due before end of each 60 months following Initial Performance Test 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: to demonstrate compliance with the particulate emission limit set under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 60 months following Initial Performance Test (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4
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.
The Permittee shall use data from the COM on EU 002 to determine compliance with the opacity limit in Minn. R. 7011.0510, subp. 2.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to one-minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the one-minute averaging period.	Minn. R. 7007.0800, subp. 2
COMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all COMS shall be in continuous operation.	Minn. R. 7007.0800, subp. 2
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds the specification of PS-1 of 40 CFR 60, Appendix B.	Minn. R. 7017.1000; Minn. R. 7007.0800, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7007.0800, subp. 2
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. 7007.0800, subp. 5
Recordkeeping: Keep on site at the source each of the following documents for a period of 5 years from the date the document is created: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.	40 CFR Section 72.9(f)(l)
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	Minn. R. 7007.0800, subp. 5
Maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records.	Minn. R. 7007.0800, subp. 5
Apply for Acid Rain Program Permit reissuance: The designated representative or the alternate designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).	40 CFR Section 72.30(c)
Certify Acid Rain Program submittals. Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative or the alternate designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.	40 CFR Section 72.21
Hold allowances as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year. Takes effect for years beginning January 1, 2000. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9(g)(4)

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: EU 003 Power Boiler 3

Associated Items: CE 003 Alkaline Fly Ash Scrubbing

MR 014

MR 015

MR 016

MR 019

SV 003

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million BTU heat input	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
Sulfur Dioxide: less than or equal to 4.0 lbs/million BTU heat input using 3 Hour Average period 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 EU003 sulfur dioxide limit applies regardless if EU001 and EU002 are operating. See GP001 for additional EU003 (SV003) SO2 limits.	Minn. R. 7011.0510, subp. 1
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
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 0.45 lbs/million Btu heat input on an annual average. If the unit is in compliance with its applicable emission limitation for each year of the plan, then the unit shall not be subject to the applicable emission limitation, under 40 CFR 76.7(a)(1), of 0.40 lb/mmBtu until calendar year 2008.	40 CFR Section 76.8 Early election for Group 1, Phase II boilers and 40 CFR Section 76.5(a)(1)
Application for NOx limits: Submit a complete permit application and compliance plan for NOx emissions in accordance with 40 CFR Section 76.9.	40 CFR Section 76.9(b)(2)
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, 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)). 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.	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, and not to exceed 2,456 gallons per hour.	Minn. R. 7007.0800, subp. 2
Measure all SO2, NOx, and CO2 emissions for each affected unit in accordance with 40 CFR Section 75.10. EU 003 is exempt from the opacity monitoring requirement under 40 CFR Section 75.10 due to moisture in the flue gases. (See 40 CFR 75.14(b).)	40 CFR Section 75.10
Initial Performance Test: due 180 days after Permit Issuance to determine compliance with particulate matter emission limit in Minn. R. 7011.0510, subp. 1.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test: due before end of each 60 months following Initial Performance Test to determine compliance with particulate matter emission limit in Minn. R. 7011.0510, subp. 1. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 60 months following Initial Performance Test (7 days before each performance test)	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

<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)
<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 Pre-test Meeting: due 7 days before Performance Test (Waste Water Sludge Performance Test)</p>	Minn. R. 7017.2030, subp. 4
<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.
<p>Performance Test Pre-test Meeting: due 7 days before Performance Test (Oily Materials Performance Test)</p>	Minn. R. 7017.2030, subp. 4.
<p>Opacity monitoring alternative - monitor the following operating parameters for CE 003: 1) prequench slurry flow; 2) prequench slurry pressure; 3) high pressure slurry flow; 4) high pressure slurry pressure. (See requirements under CE 003).</p>	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Recordkeeping: Keep on site at the source each of the following documents for a period of 5 years from the date the document is created: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.	40 CFR Section 72.9(f)(l)
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	Minn. R. 7007.0800, subp. 5
Maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records.	Minn. R. 7007.0800, subp. 5
Apply for Acid Rain Program Permit reissuance: The designated representative or alternate designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).	40 CFR Section 72.30(c)
Certify Acid Rain Program submittals. Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative or alternate designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.	40 CFR Section 72.21
Hold allowances as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year. Takes effect for years beginning January 1, 2000. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9(g)(4)

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: EU 004 Power Boiler 4

Associated Items: CE 004 Venturi Scrubber
CE 005 Electrostatic Precipitator - High Efficiency
CE 006 Spray Tower
CE 011 Fly Ash Injection
MR 005
MR 006
MR 007
MR 008
SV 004

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.1 lbs/million BTU heat input	Title I Condition: 40 CFR Section 52.21 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)
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. See GP 001 for additional EU 004 (SV 004) SO ₂ limits.	Title I Condition: 40 CFR Section 52.21 PSD BACT limit and ambient impacts analysis; 40 CFR Section 60.43
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
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 and less than 0.3 lb/mmBtu from liquid fossil fuels. When fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula: $PS = [0.3y + 0.7z] / (y + z)$ where PS is the prorated NO _x standard, 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 PSD BACT limit and ambient impacts analysis; 40 CFR Section 60.44
NO _x Averaging Plan Beginning January 1, 2000 either: Maintain an annual average NO _x emission rate of 0.35 lbs/MMBtu and maintain the annual heat input to greater than or equal to 25,000,000 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, 4 Syl Laskin 1, 2	40 CFR Section 76.11
Application for NO _x limits: Submit a complete permit application and compliance plan for NO _x emissions in accordance with 40 CFR Section 76.9.	40 CFR Section 76.9(b)(2)
Fuel use: limited to sub-bituminous coal, boiler cleaning agents, distillate oil, oily coal, oily paper-based floor dry, and used oil.	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 (approximately 10 percent of rated capacity of 5,109 mmBtu/hour) on an hourly basis.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Initial Performance Test: due 180 days after Permit Issuance to determine compliance with particulate matter emission limit in 40 CFR Section 60.42(a)(1)/Title 1 condition PSD BACT particulate matter emission limit.	Title I Condition: to demonstrate compliance with the particulate limit set under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test: due before end of each 60 months following Initial Performance Test to determine compliance with the Title 1 condition particulate matter emission limit. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Title I Condition: to demonstrate compliance with the particulate emission limit set under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 60 months following Initial Performance Test (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4
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.
Notification that Continuous Opacity Monitoring System (COMS) data will be used to determine compliance with opacity standard during Performance Test: due 30 days before Performance Test	40 CFR Section 60.7(a)(7)
The Permittee shall use the COM on SV 004 to determine compliance with the opacity limit in 40 CFR Section 60.42(a)(2).	Minn. R. 7007.0800, subp. 2
The Permittee shall use the NOx and SO2 CEMS on SV 004 to determine compliance with the EU 004 NOx and SO2 emissions limits.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Recordkeeping: Keep on site at the source each of the following documents for a period of 5 years from the date the document is created: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.	40 CFR Section 72.9(f)(l)
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
Maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records.	40 CFR Section 60.7(f); Minn. R. 7007.0800, subp. 5
Apply for Acid Rain Program Permit reissuance: The designated representative or alternate designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).	40 CFR Section 72.30(c)
The owner or operator shall measure opacity, and all SO ₂ , NO _x , and CO ₂ emissions for each affected unit in accordance with 40 CFR Section 75.10.	40 CFR Section 75.10
Certify Acid Rain Program submittals. Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative or the alternate designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.	40 CFR Section 72.21
Hold allowances as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year. Takes effect for years beginning January 1, 2000. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9(g)(4)
Submit the calculations and annual average emission rate of sulfur dioxide along with the annual compliance certification (see total facility requirements)	Minn. R. 7021.0050

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr
Permit Number: 06100004 - 002

Subject Item: EU 007 LP Gas Emerg. Generator 1

Associated Items: SV 007

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr
Permit Number: 06100004 - 002

Subject Item: EU 009 Diesel Emergency Generator 3

Associated Items: SV 009

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr
Permit Number: 06100004 - 002

Subject Item: EU 010 Diesel Emergency Generator 4

Associated Items: SV 010

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity for more than 10 consecutive seconds once operating temperatures have been obtained.	Minn. R. 7011.2300, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot if not required 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.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot if not required 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.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot if not required 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.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot if not required to comply with the less stringent limit of either Minn. R. pt. 7011.0730 or Minn. R. pt. 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.	Minn. Stat. Section 116.07, subd. 4(a); Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

Subject Item: CE 003 Alkaline Fly Ash Scrubbing**Associated Items:** EU 003 Power Boiler 3

What to do	Why to do it
Opacity monitoring alternative - monitor the following operating parameters for CE003: 1)prequench slurry flow; 2)prequench slurry pressure; 3)high pressure slurry flow; 4)high pressure slurry pressure.	Minn. R. 7007.0800, subp. 4
Operate CE003 wet scrubber in accordance with the following operating parameters, in order to determine compliance with the opacity limit under Minn. R. 7011.0510, subp. 2: a. Prequench slurry flow >4592 gpm Prequench slurry pressure >32 psig b. High pressure slurry flow >4536 gpm High pressure slurry pressure >158 psig	Minn. R. 7007.0800, subp. 2
Record once each hour of operation of EU003 for CE003: 1)prequench slurry flow rate; 2)prequench slurry pressure; 3)high pressure slurry flow rate; 4)high pressure slurry pressure.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

What to do	Why to do it
A minimum of one venturi slurry pump for each particulate scrubber module shall be operated at all times during the operation of EU004.	Title 1 Condition: To ensure compliance with the particulate matter emission limit set under 40 CFR Section 52.21 and 40 CFR Section 60.42(a)(1)

TABLE A: LIMITS AND OTHER REQUIREMENTS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

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

What to do	Why to do it
<p>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.</p> <p>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.</p>	<p>Title 1 Condition: To ensure compliance with the particulate matter emission limit set under 40 CFR Section 52.21 and 40 CFR Section 60.42(a)(1)</p>

TABLE B: SUBMITTALS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr
Permit Number: 06100004 - 002

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.

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 any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

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

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

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 1,096 days after Permit Issuance . Dispersion modeling is required for PM10, SO2 and NOx if potential emissions from the facility are in excess of 100 tons per year. The protocol will describe the proposed modeling methodology and input data in accordance with all requirements of 40 CFR pt. 51, App. W. The protocol may be based on proposed operating conditions under the next permit term if necessary.	Total Facility
Computer Dispersion Modeling Results	due 1,462 days after Permit Issuance	Total Facility
Fugitive Control Plan	due 60 days after Permit Issuance . The plan shall identify all fugitive emission sources, primary and contingent control measures, and the records to be kept to demonstrate that the plan is implemented.	Total Facility
Performance Test Notification (written)	due 30 days before Initial Performance Test	EU001, EU002, EU003, EU004
Performance Test Notification (written)	due 30 days before Performance Test (Oily Materials Performance Test)	EU003
Performance Test Notification (written)	due 30 days before Performance Test (Waste Water Sludge Performance Test)	EU003
Performance Test Plan	due 30 days before Initial Performance Test	EU001, EU002, EU003, EU004
Performance Test Plan	due 30 days before Performance Test (Oily Materials Performance Test)	EU003
Performance Test Plan	due 30 days before Performance Test (Waste Water Sludge Performance Test)	EU003
Performance Test Report - Microfiche Copy	due 105 days after Initial Performance Test	EU001, EU002, EU003, EU004
Performance Test Report - Microfiche Copy	due 105 days after Performance Test (Oily Materials Performance Test)	EU003
Performance Test Report - Microfiche Copy	due 105 days after Performance Test (Waste Water Sludge Performance Test)	EU003
Performance Test Report	due 45 days after Initial Performance Test	EU001, EU002, EU003, EU004
Performance Test Report	due 45 days after Performance Test (Oily Materials Performance Test)	EU003
Performance Test Report	due 45 days after Performance Test (Waste Water Sludge Performance Test)	EU003
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA) .	SV003, SV004

TABLE B: RECURRENT SUBMITTALS

03/05/99

Facility Name: Minnesota Power Inc - Boswell Energy Ctr

Permit Number: 06100004 - 002

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	EU001, EU002, SV003, SV004
Linearity Test Results Summary	due 30 days after end of each calendar quarter following Linearity and Leak Check Test (Acid Rain Program) if performed.	SV003, SV004
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	SV003, SV004
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit .	EU001, EU002, SV004
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance	Total Facility
Compliance Certification Report (Acid Rain Program)	due 60 days after end of each calendar year starting 01/01/00 an annual compliance certification report for the unit in accordance with 40 CFR Section 72.90(a). The report shall include all information required by 40 CFR Section 72.90(b) and (c).	EU001, EU002, EU003, EU004
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner	Total Facility
Performance Test Notification (written)	due 30 days before end of each 60 months following Initial Performance Test (30 days before each Performance Test)	EU001, EU002, EU003, EU004
Performance Test Plan	due 30 days before end of each 60 months following Initial Performance Test (30 days before each Performance Test)	EU001, EU002, EU003, EU004
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months following Initial Performance Test (105 days after each Performance Test)	EU001
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months following Initial Performance Test (105 days after each Performance Test)	EU002
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months following Initial Performance Test (105 days after each Performance Test)	EU003
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months following Initial Performance Test (105 days after each Performance Test)	EU004
Performance Test Report	due 45 days after end of each 60 months following Initial Performance Test (45 days after each Performance Test)	EU001
Performance Test Report	due 45 days after end of each 60 months following Initial Performance Test (45 days after each Performance Test)	EU002
Performance Test Report	due 45 days after end of each 60 months following Initial Performance Test (45 days after each Performance Test)	EU003
Performance Test Report	due 45 days after end of each 60 months following Initial Performance Test (45 days after each Performance Test)	EU004

APPENDIX MATERIAL

Facility Name: Minnesota Power & Light - Boswell Energy

Permit Number: 06100004-002

Phase II NO_x Compliance Plan

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

This submission is:

☒

New

☐

Revised

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

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)			X			
(d) Standard annual average emission limitation of 0.46 lb/mmBtu (for <u>Phase II</u> dry bottom wall-fired boilers)						
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for <u>Phase II</u> 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) NO_x Averaging Plan (include NO_x Averaging form)	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						
(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.

Phase II NO_x 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
Clav Boswell	MN	1	0.46	0.50	4,500,000
Clav Boswell	MN	2	0.46	0.50	4,500,000
Clav Boswell	MN	4	0.40	0.35	25,000,000
Svl Laskin	MN	1	0.40	0.50	3,500,000
Svl Laskin	MN	2	0.40	0.50	3,500,000

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

0.41

0.41

n

n

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

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 2000 through calendar year 2002 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.

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.

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:
 - (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;
 - (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.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 06100004-002

This Technical Support Document (TSD) is for all the interested parties of the permit. The purpose of this document is to set forth the legal and factual basis for the permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner/Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 4911)
Minnesota Power 30 West Superior Street Duluth, Minnesota 55802	1200 Northwest Third Street Cohasset, Minnesota 55721-4763 Itasca County

1.2. Description Of The Facility

Minnesota Power operates the Boswell Energy Center, an electric generating facility, which consists of steam generating boilers, emergency generators, cooling towers, coal receiving, handling, and storage facilities, and ash handling and storage capabilities. The boilers are coal-fired and have a combined net generating capacity of approximately 1025 megawatts. Emissions of particulate matter from the boilers are controlled by fabric filters (baghouses) (Boilers 1 and 2), wet scrubbers (Boilers 3 and 4), and an electrostatic precipitator (ESP) (Boiler 4). Sulfur Dioxide (SO₂) is controlled from Boiler 4 with a SO₂ absorber and Nitrogen Oxide (NO_x) emissions are reduced through the use of over-fire air. The Boiler 3 wet scrubber also reduces SO₂ emissions from this boiler.

1.3 Description of the Activities Allowed By This Permit Action

The focus of this amendment is the addition of the NO_x requirements to the Phase II Acid Rain portion of the Title V operating permit. The requirements state that power Boilers 1, 2, and 4 shall limit NO_x emissions in a manner consistent with the NO_x averaging plan application (see attached) and that power Boiler 3 shall limit the NO_x emission to 0.45 lbs/MMBtu, consistent with 40 CFR § 76.8 and 40 CFR § 76.5(a). A few administrative changes were made to the permit to bring it current with the latest rule change. The administrative changes consist of wording amendments to the Shutdown, Breakdown and Deviations Endangering Human Health language on the Total Facility pages and the opacity language for each boiler subject to only the state opacity rule.

1.4. Facility Emissions:

No creditable emissions increases or decreases have been authorized by this permit amendment.

Table 1. Permit Action Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)			
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	X		

* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

Regulatory Overview of Units Affected by the Modification

The purpose of this table is to give an overview of the new/modified sources of emissions and the applicable regulations and standards. It is not designed for the discussion of specific limits, unless they are unusual and need some explanation, nor is it for the discussion of compliance demonstration requirements. This information is obtainable from the permit, but this section provides users in the future with a quick overview of the modification and its effect on the permit.

Table 4. Regulatory Overview

*EU, GRP, or SV #	Applicable Regulations	**Comments
EU001	40 CFR § 76.11	NO _x averaging plan used to keep plan wide average emissions at or below the individual boiler emissions for the boilers in the plan.
EU002	40 CFR § 76.11	NO _x averaging plan used to keep plan wide average emissions at or below the individual boiler emissions for the boilers in the plan.
EU003	40 CFR § 76.8	Early election for Group 1 Phase II boilers. Allows boiler to take Phase I emission limit through 2007
EU004	40 CFR § 76.11	NO _x averaging plan used to keep plan wide average emissions at or below the individual boiler emissions for the boilers in the plan.

* Insert the number that identifies the level the limit was set on.

** Comments column is for citations that need further explanation only. Most rows should not have any further explanation needed.

3. Technical Information

The NO_x averaging plan proposes alternative NO_x emission rates and annual heat inputs for Boilers 1, 2, and 4 at the Clay Boswell plant and Boilers 1 and 2 at the Syl Laskin plant. These emission rates and annual heat inputs are equivalent to the lb/MMBtu emission rate if all boilers were to meet their own Phase II NO_x emission rate at the proposed annual heat input.

4. Conclusion

Based on the information provided by Minnesota Power, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 06100004-002, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Daren Zigich

Attachment: CD-01 Forms
Acid Rain NO_x application