

AIR EMISSION PERMIT NO. 13700013-005

IS ISSUED TO

Minnesota Power Division of ALLETE, Inc.

MINNESOTA POWER - LASKIN ENERGY CENTER

County Road 633

Aurora, St. Louis County, MN 55705

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	Issue Date	Action Number
Total Facility Operating Permit	09/15/1995	05/12/1997	001
Major Amendment	12/23/1997	03/05/1999	002
Minor Amendment	02/11/2002	06/04/2002	003
Total Facility Operating Permit - Reiss.	11/14/2001	Not Issued	004
Major Amendment	04/07/2006	See below	005

This permit authorizes the permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Part 70/Major for NSR

Authorization to Construct and Operate (40 CFR § 52.21) Issuance Date: August 30, 2006

Authorization to Construct and Operate (40 CFR § 52.21) Effective Date: August 30, 2006

Final Permit Issuance Date: September 18, 2006

Expiration: Upon re-issuance of Part 70 permit (Existing Part 70 permit expired 05/12/2002 and re-issuance application was timely) Title I Conditions do not expire.

Richard J. Sandberg, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
Acting Commissioner
Minnesota Pollution Control Agency

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

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

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

PERMIT SHIELD:

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

The permit shield, however does not apply to:

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

FACILITY DESCRIPTION:

The Laskin Energy Center is an electric generating facility located near Aurora, Minnesota. This electric power facility contains two identical steam generating boilers, coal receiving, handling, and storage facilities, and ash handling and storage capabilities. The net generating capacity is 110 megawatts (MW) when firing coal alone or coal with waste oil/solvent/natural gas in the boiler ignitors.

All operations and equipment within the facility boundary: (1) provide electrical power for on-site and off-site use, (2) provide fuel for electrical power production or support activities, (3) monitor and control air pollutants generated from electrical power production, (4) handle waste material and energy generated by the on-site operations, and (5) provide support activities.

ACTION 002

Action 002 was a major amendment that added applicable NO_x requirements to the Phase II Acid Rain portion of the Title V operating permit. The requirements state that power boilers 1 and 2 shall limit NO_x emissions in a manner consistent with the NO_x averaging plan application (see attached).

ACTION 003

Action 003 was a minor amendment that allowed the Permittee to replace the 12 existing distillate oil-fired ignitors in Boilers 1 and 2, with 12 new ignitors that can burn distillate oil and natural gas. To accommodate this, natural gas has been added to the list of permitted fuels.

ACTION 004

Action 004 was the reissuance of the title V operating permit. Drafting of this reissuance permit commenced during January 2006, but was discontinued when the application for permit action 005 was received. The title V operating permit will be reissued after issuance of permit action 005.

ACTION 005

Action 005 is a major amendment authorizing installation of low-nitrogen oxide burners and overfire air controls in each boiler. The modifications will reduce emissions of nitrogen oxides but may be accompanied by a collateral increase in Carbon Monoxide (CO). The permit limits the CO increase to less than the prevention of significant deterioration significant emissions threshold.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

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
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr
<p>These requirements apply where there is a reasonable possibility that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test and found to not be part of a major modification, may result in a significant emissions increase. If the ATPA test is not used for a particular project, or if there is not a reasonable possibility that the proposed project could result in a significant emissions increase, then these requirements do not apply to that project.</p> <p>Even though a particular modification is not subject to New Source Review, a permit amendment, recordkeeping, or notification may still be required under Minn. R. 7007.1150 - 7007.1500.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000
<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following information:</p> <ol style="list-style-type: none"> 1. A description of the project 2. Identification of the emission unit(s) whose emissions of an NSR pollutant could be affected 3. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the potential emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the unit(s) could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. <p>The Permittee shall maintain records of this documentation.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
Before beginning actual construction of any project which includes any electric utility steam generating unit (EUSGU), the Permittee shall submit a copy of the preconstruction documentation (items 1-3 under Preconstruction Documentation, above) to the Agency.	Title I Condition: 40 CFR Section 52.21(r)(6)(ii) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
<p>For any project which includes any EUSGU, the Permittee must submit an annual report to the Agency, within 60 days after the end of the calendar year. The report shall contain:</p> <ol style="list-style-type: none"> a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The quantified annual emissions analyzed using the ATPA test, plus the potential emissions associated with the same project and analyzed using potential emissions c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection, if that is the case. 	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

For any project which does not include any EUSGU, the Permittee must submit a report to the Agency if the annual summed (actual plus potential, if applicable) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain:	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The annual emissions (actual plus potential, if any part of the project was analyzed using potential emissions) for each pollutant for which the preconstruction projection and significant emissions rate is exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection.	
OPERATING REQUIREMENTS	hdr
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
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. Stat. Section 116.07, subd. 4a and 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)
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit and completion of permit reopening and reissuance. If limits serve to cause more stringent operating conditions, resulting changes to facility operation need to be made immediately. If limits serve to relax current operating conditions, resulting changes to facility operation must not be made prior to issuance of permit amendment with new limit incorporated.	Minn. R. 7017.2025
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state requirement only and is not federally enforceable.	Minn. R. 7030.0010-7030.0080
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location. The Permittee may require that MPCA inspectors be accompanied by MP staff during the inspection. Permittee's staff shall be available whenever the plant is operating.	Minn. R. 7007.0800, subp. 9(A)
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
Combustion Of Oily Cellulose-Based Sorbents (including rags): The permit is permitted to burn oily cellulose-based sorbent and rags in both boilers. The materials must be cellulose-based and are subject to the following limits: 1) 1.25 tons per hour; and 2) 25 tons per year (on a 12-month rolling sum basis). The Permittee shall record the quantity of sorbent materials burned on an hourly and 12-month rolling sum basis.	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 and Minn. R. 7007.3000
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards at 40 CFR part 50, and the Minnesota Ambient Air Quality Standards at Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
PERFORMANCE TESTING REQUIREMENTS	hdr
<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2030, subp. 1-4, Minn. R. 7017.2035, subp. 1-2, & Minn. R. 7017.2018
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
MONITORING REQUIREMENTS	hdr
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 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)
<p>Monitoring and Recordkeeping Requirements For Fabric Filters: For all fabric filters controlling emissions from solid fuel handling equipment:</p> <ol style="list-style-type: none"> 1. Inspect as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. 2. Inspect 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 from the inspection. 3. Check visible emissions once weekly when the fuel handling equipment is operating. If visible emissions exist, inspect equipment for evidence of malfunction. Record results of the inspection, and any corrective action taken. 	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
RECORDKEEPING REQUIREMENTS	hdr
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
REPORTING AND SUBMITTAL REQUIREMENTS	hdr
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**A-4**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

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 any dust collector that experienced a breakdown and/or 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
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
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)
Emission Fees: due 60 days after receipt of an MPCA bill	Minn. R. 7002.0005 through Minn. R. 7002.0095
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit the report on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

Subject Item: GP 001 Boilers**Associated Items:** CE 004 Low Nox Burners

CE 005 Low Nox Burners

CE 006 Overfire Air

CE 007 Overfire Air

EU 001 Boiler - Unit #1; CE 001, CE 004, CE 006

EU 002 Boiler - Unit #2; CE 002, CE 005, CE 007

SV 001 Common Boiler Stack

What to do	Why to do it
Existing Boiler Modifications: The Permittee is authorized to install low-NOx burners (LNB) and overfire air (OFA) systems on each boiler. The Permittee intends to make the modifications during scheduled outages in 2006 and 2007. One boiler will be modified during each scheduled outage.	hdr
<p>Post-LNB & OFA Modification Requirements. The Permittee shall meet either option 1 or option 2:</p> <p>1.a. Individually validate EU 001 and EU 002 CO emissions are less than or equal to the EU 001 and EU 002 CO 0.126 lb/mmBtu emission factor, and</p> <p>1.b. Monitor, record, and report GP 001 emissions as required by 40 CFR Section 52.21(r)(6);</p> <p>OR</p> <p>2. Meet the GP 001 630 ton per year (12-month rolling sum basis) CO limit and all associated monitoring, recordkeeping, and reporting requirements in table A of this permit.</p> <p>If either EU 001 or EU 002 CO emission factor testing results in a factor greater than 0.126 lb/mmBtu, the Permittee shall follow option 2 and associated CO monitoring and recordkeeping requirements in EU 001, EU 002, and GP 001 in table A of this permit.</p>	Title I Condition: 40 CFR Sections 52.21(b) & 52.21(r)(6) and Minn. R. 7007.3000
<p>Reverting From Option 2 To Option 1: The Permittee may revert from option 2 to option 1 under the following conditions:</p> <p>1. a subsequent CO performance test on the same emission unit that previously tested above 0.126 lb/mmBtu measures CO emissions no greater than 0.126 lb/mmBtu;</p> <p>2. the Permittee continues to follow option I Section 52.21(r)(6) requirements during the five-year period following the resumption of regular operation after completion of modifications of both units, regardless if option 2 applies.</p> <p>If both units previously tested above 0.126 lb/mmBtu, subsequent CO performance tests must show CO emissions no greater than 0.126 lb/mmBtu for both units in order to revert to option 1. This permit provision expires 5 years following resumption of regular operations after completion of modifications of both units.</p>	Title I Condition: 40 CFR Sections 52.21(b) & 52.21(r)(6) and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 630 tons/year using 12-month Rolling Sum for both boilers combined. This limit applies at the end of the twelfth month after initial startup of the first modified boiler, if the Permittee elects or is required to meet this limit.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000

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

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<p>Carbon Monoxide: If the Permittee elects to or is required to meet the GP 001 630 ton per year CO limit, the following cumulative limit as of month 'n' where n = 1, 2, 3, etc. applies after initial startup of the first modified boiler:</p> <p>Month 1: 100 tons Month 2: 200 tons Month 3: 275 tons Month 4: 350 tons Month 5: 400 tons Month 6: 450 tons Month 7: 490 tons Month 8: 520 tons Month 9: 550 tons Month 10: 580 tons Month 11: 610 tons</p> <p>Month 1 includes the month of initial startup of the first modified boiler. This requirement terminates at the end of the twelfth month following initial startup of the first modified boiler.</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>
<p>Carbon Monoxide: less than or equal to 738 tons/year on a calendar year basis for both boilers combined. This limit becomes effective upon initial startup of the first modified boiler. This limit and associated recordkeeping is suspended if post-modification CO emission factor testing of EU 001 and EU 002 demonstrates a CO emission factor less than or equal to 0.124 lb/mmBtu for each emission unit. This limit is re-instated if a subsequent EU 001 or EU 002 CO emission factor test measures CO in excess of 0.124 lb/mmBtu.</p>	<p>Minn. R. 7007.0800, subp. 2 to avoid 100 tpy environmental review potential emission increase threshold</p>
<p>GP 001 CO Emissions Monitoring and Recordkeeping: If the Permittee elects to or is required to meet the 630 ton per year GP 001 CO limit, by the last day of each month the Permittee shall calculate and record:</p> <ol style="list-style-type: none"> 1. monthly GP 001 CO emissions for the previous calendar month by summing the EU 001 CO and EU 002 CO emissions determined according to the requirements listed under EU 001 and EU 002, respectively, from the previous calendar month; 2. GP 001 CO emissions from the previous twelve-month period by summing the monthly GP 001 CO emissions from the previous twelve months. 	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>
<p>GP 001 CO Emissions Monitoring and Recordkeeping: The Permittee shall calculate and record the GP 001 calendar year CO emissions by January 30 of each year, for the previous calendar year.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 to avoid 100 tpy environmental review potential emission increase threshold</p>
<p>If either EU 001 or EU 002 CO emission factor testing results in a factor greater than 0.126 lb/mmBtu, the Permittee may opt to perform additional analyses to demonstrate that the CO emissions performance satisfies Prevention of Significant Deterioration requirements under 40 CFR Section 52.21, and obtain a permit according to 40 CFR Section 52.21.</p>	<p>40 CFR Section 52.21(a)(2)(iii)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

Subject Item: SV 001 Common Boiler Stack**Associated Items:** EU 001 Boiler - Unit #1; CE 001, CE 004, CE 006

EU 002 Boiler - Unit #2; CE 002, CE 005, CE 007

GP 001 Boilers

MR 001

MR 002

MR 003

MR 004

MR 005

What to do	Why to do it
Sulfur Dioxide: less than or equal to 2.04 lbs/million Btu heat input using 1-Hour Average .	Minn. R. 7007.0800, subp. 2
Refer to EU 001 and EU 002 for the SO2 limit applicable to each emission unit.	
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to a one-minute averaging period. 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 twice 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/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
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 App B.	40 CFR pt. 75 App B, section 2.1
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 a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75 App B. If the RATA results indicate a relative accuracy of 7.5% or less, the next RATA is not required for another year.	40 CFR pt. 75 App B, section 2.3
Linearity and Leak Check Test (Acid Rain Program): due before end of each calendar quarter following CEM Certification Test . Conduct a quarterly linearity test on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75 App B.	40 CFR pt. 75 App B, section 2.2

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

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

Subject Item: EU 001 Boiler - Unit #1; CE 001, CE 004, CE 006**Associated Items:** CE 004 Low Nox Burners

CE 006 Overfire Air

GP 001 Boilers

SV 001 Common Boiler Stack

What to do	Why to do it
LIMITS AND OPERATING REQUIREMENTS	hdr
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 1-Hour Average period for solid fuels, and 2.0 lb/mmBtu when burning liquid fuels. When 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 input from solid fossil fuels. Refer to SV 001 for additional SO2 limit applicable to the common stack.	Minn. R. 7011.0510, subp. 1
Nitrogen Oxides: less than or equal to 0.20 lbs/million Btu heat input using 365-day Rolling Average. If EU 001 is the first boiler modified, this limit applies 270 days after completion of LNB and OFA modifications. If EU 001 is the second boiler modified, this limit applies 60 days after completion of LNB and OFA modifications.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act
Post-LNB and OFA Modification Requirements: The Permittee shall either: 1.a. Conduct EU 001 CO performance testing to confirm EU 001 CO emissions do not exceed the EU 001 CO lb/mmBtu emission factor, and 1.b. Monitor, record, and report GP 001 emissions as required by 40 CFR Section 52.21(r)(6); OR 2. Conduct EU 001 CO performance testing and meet the GP 001 630 ton-per-year (12-month rolling sum basis) CO limit if performance testing demonstrates the EU 001 CO factor exceeds 0.126 lb/mmBtu.	Title I Condition: 40 CFR Section 52.21(r)(6)
Carbon Monoxide: less than or equal to 0.126 lbs/million Btu heat input (this is an emission factor and not a limit). The Permittee shall validate this factor through performance testing. If performance testing shows a factor greater than 0.126 lb/mmBtu, the Permittee shall meet the GP 001 630 tpy limit.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000
Fuel use: limited to sub-bituminous and bituminous coal, distillate oil, natural gas, boiler cleaning agents, non-hazardous petroleum distillate solvents and derived fuels, used oil, oily coal (coal with oil spilled on it), and oily cellulose-based sorbents (including rags).	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Boiler cleaning agents limited to: EDTA type and Ammonium Bromate, are generated on-site, 5% of total fuel mass, 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. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Burn off-specification and on-specification used oil in accordance with Minn. R. ch. 7045, not to exceed 720 gallons per hour and 2,500,000 gallons annually.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
EU 001 Bituminous Coal Operations: If the Permittee combusts any bituminous coal after EU 001 LNB and OFA modifications, the Permittee shall conduct a post-modification CO performance test while burning bituminous coal. The Permittee may continue burning bituminous coal in EU 001 after completion of testing.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000
EU 001 CO Emissions Indicator: The Permittee shall operate EU 001 so that CO (ppm) measured by the emissions indicator does not exceed a value based on values measured during the most recent MPCA-approved performance stack test for evaluating the EU 001 CO emission factor.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000
ACID RAIN PROGRAM REQUIREMENTS	hdr
Comply with the applicable Acid Rain emissions limitation for sulfur dioxide. Takes effect for years beginning January 1, 2000.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9(g)(4)
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)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<p>NOx Averaging Plan</p> <p>Beginning January 1, 2000 either:</p> <p>Maintain an annual average NOx emission rate of 0.40 lbs/mmBtu and limit the annual heat input to less than or equal to 3,500,000 mmBtu per year.</p> <p>OR</p> <p>Maintain a Btu-weighted annual average emission rate in lbs/mmBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the Btu-weighted annual average emission rate averaged over the same units had they each been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are:</p> <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Clay Boswell</td><td>1, 2, 3, 4</td></tr> <tr> <td>Syl Laskin</td><td>1, 2</td></tr> <tr> <td>Taconite Harbor</td><td>1, 2, 3</td></tr> </table>	Plant	Boiler ID#	Clay Boswell	1, 2, 3, 4	Syl Laskin	1, 2	Taconite Harbor	1, 2, 3	40 CFR Section 76.11
Plant	Boiler ID#								
Clay Boswell	1, 2, 3, 4								
Syl Laskin	1, 2								
Taconite Harbor	1, 2, 3								
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)								
Apply for Acid Rain Program Permit reissuance: The 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)								
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								
PERFORMANCE TESTING	hdr								
<p>Initial Performance Test: due 270 days after Initial Startup of EU 001 after completion of LNB and OFA modifications to determine the CO emission factor on a lb/mmBtu basis, if EU 001 is the first boiler modified. If EU 001 is the second boiler modified, the initial performance test shall be completed within 60 days after initial startup after the modification. Separate tests shall be conducted for sub-bituminous coal and bituminous coal.</p> <p>The Permittee may avoid EU 001 bituminous coal testing if the Permittee does not burn any bituminous coal in EU 001 after LNB and OFA modifications.</p>	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1								
Performance Test: due before end of each 60 months following Initial Performance Test to determine compliance with the particulate matter emissions 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								
<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 2.A. and 3.B.								

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

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<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 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% of 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
MONITORING AND RECORDKEEPING	hdr
<p>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.</p>	Minn. R. 7007.0800, subp. 2
<p>Excess emissions and monitoring system performance reports shall include the information required in 40 CFR Section 60.7(c) and (d). MPCA supplied forms DRF-1 and DRF-2 may be used to meet this requirement.</p>	Minn. R. 7007.0800, subp. 2
<p>EU 001 CO Emissions Indicator Monitoring and Recordkeeping: The Permittee shall install, operate, and maintain a process CO monitor (ppm monitor primarily for the boiler operator) upstream of the EU 001 air heater, and record the indicator measurements. The monitoring and recordkeeping equipment shall be operated and maintained at all times during EU 001 operation.</p> <p>CO concentration will not exceed a value based on values recorded during the most recent MPCA-approved performance test. The measurement frequency and averaging period associated with this emissions indicator will be derived by the Permittee through analysis of the correlation between indicator readings and the first performance test results. The results of the analysis will be summarized in a CO monitoring plan to be submitted to the Agency for approval within 120 days after the first performance test.</p>	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000

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

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<p>EU 001 CO Emissions Monitoring and Recordkeeping: If the Permittee elects or is required to meet the 630 tpy (on a 12-month rolling sum basis) limit in GP 001, by the last day of each month commencing with the month of initial startup of the first boiler after LNB and OFA modifications are completed, the Permittee shall:</p> <ol style="list-style-type: none"> 1. calculate and record EU 001 monthly fuel usage of bituminous and sub-bituminous coal; 2. calculate and record monthly EU 001 CO emissions using the following equation: $\text{EU 001 CO} = (\text{FU} * \text{HC} * \text{EF}) / 2000$ <p>where:</p> <p>EU 001 CO = monthly EU 001 CO emissions for each coal type (tons) FU = EU 001 monthly fuel consumption for each coal type (tons) HC = fuel heat content for each coal type (mmBtu/ton) EF = current EU 001 CO emission factor for each coal type (lb/mmBtu)</p> <p>If EU 001 is the second boiler modified, the CO factor prior to modification shall be 0.108 lb/mmBtu.</p> <p>(continued below)</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>
<p>EU 001 CO Emissions Monitoring and Recordkeeping (continued from above)</p> <p>If EU 001 is the first boiler to be modified, the Permittee shall use 0.126 lb/ mmBtu for the CO emission factor until receipt of written MPCA approval of the EU 001 CO emission factor evaluation stack test results. After receipt of approval, the Permittee shall use the CO factor determined during EU 001 testing.</p> <p>If EU 001 is the second boiler to be modified, the Permittee shall use the MPCA-approved EU 002 CO emissions factor, if available, until EU 001 testing is completed and written approval is received from the MPCA to use the EU 001 CO factor determined during EU 001 testing.</p> <p>If the EU 002 factor is not available and/or was not approved, the Permittee shall use the default 0.126 lb/mmBtu CO factor until receipt of written MPCA approval of EU 001 CO emission factor testing results.</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>
<p>EU 001 Bituminous Coal CO Monitoring: If the Permittee combusts bituminous coal after LNB and OFA modifications, the Permittee shall calculate bituminous coal CO emissions using the EU 001 subbituminous coal CO emission factor until receipt of written MPCA confirmation of the EU 001 bituminous coal CO test results.</p> <p>After receipt of written MPCA confirmation of the EU 001 bituminous coal CO test results, the Permittee shall determine EU 001 bituminous coal CO emissions using the approved EU 001 bituminous coal emission factor. The Permittee shall also recalculate EU 001 bituminous coal CO emissions that were initially determined using the subbituminous coal CO emission factor, using the approved EU 001 bituminous coal emission factor.</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

Subject Item: EU 002 Boiler - Unit #2; CE 002, CE 005, CE 007**Associated Items:** CE 005 Low Nox Burners

CE 007 Overfire Air

GP 001 Boilers

SV 001 Common Boiler Stack

What to do	Why to do it
LIMITS AND OPERATING REQUIREMENTS	hdr
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 1-Hour Average period for solid fuels, and 2.0 lb/mmBtu when burning liquid fuels. When 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 input from solid fossil fuels. Refer to SV 001 for additional SO2 limit applicable to the common stack.	Minn. R. 7011.0510, subp. 1
Nitrogen Oxides: less than or equal to 0.20 lbs/million Btu heat input using 365-day Rolling Average. If EU 002 is the first boiler modified, this limit applies 270 days after completion of LNB and OFA modifications. If EU 002 is the second boiler modified, this limit applies 60 days after completion of LNB and OFA modifications.	Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act
Post-LNB and OFA Modification Requirements: The Permittee shall either: 1.a. Conduct EU 002 CO performance testing to confirm EU 002 CO emissions do not exceed the EU 002 CO lb/mmBtu emission factor, and 1.b. Monitor, record, and report GP 001 emissions as required by 40 CFR Section 52.21(r)(6); OR 2. Conduct EU 002 CO performance testing and meet the GP 001 630 ton-per-year (12-month rolling sum basis) CO limit if performance testing demonstrates the EU 002 CO factor exceeds 0.126 lb/mmBtu.	Title I Condition: 40 CFR Section 52.21(r)(6)
Carbon Monoxide: less than or equal to 0.126 lbs/million Btu heat input (this is an emission factor and not a limit). The Permittee shall validate this factor through performance testing. If performance testing shows a factor greater than 0.126 lb/mmBtu, the Permittee shall meet the GP 001 630 tpy limit.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000
Fuel use: limited to sub-bituminous and bituminous coal, distillate oil, natural gas, boiler cleaning agents, non-hazardous petroleum distillate solvents and derived fuels, used oil, oily coal (coal with oil spilled on it), and oily cellulose-based sorbents (including rags).	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Boiler cleaning agents limited to: EDTA type and Ammonium Bromate, are generated on-site, 5% of total fuel mass, 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. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Burn off-specification and on-specification used oil in accordance with Minn. R. ch. 7045, not to exceed 720 gallons per hour and 2,500,000 gallons annually.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
EU 002 Bituminous Coal Operations: If the Permittee combusts any bituminous coal after EU 002 LNB and OFA modifications, the Permittee shall conduct a post-modification CO performance test while burning bituminous coal. The Permittee may continue burning bituminous coal in EU 002 after completion of testing.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000
EU 002 CO Emissions Indicator: The Permittee shall operate EU 002 so that CO (ppm) measured by the emissions indicator does not exceed a value based on values measured during the most recent MPCA-approved performance stack test for evaluating the EU 002 CO emission factor.	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000
ACID RAIN PROGRAM REQUIREMENTS	hdr
Comply with the applicable Acid Rain emissions limitation for sulfur dioxide. Takes effect for years beginning January 1, 2000.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9(g)(4)
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)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13**

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<p>NOx Averaging Plan</p> <p>Beginning January 1, 2000 either:</p> <p>Maintain an annual average NOx emission rate of 0.40 lbs/MMBtu and limit the annual heat input to less than or equal to 3,500,000 MMBtu per year.</p> <p>OR</p> <p>Maintain a Btu-weighted annual average emission rate in lbs/MMBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the Btu-weighted annual average emission rate averaged over the same units had they each been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are:</p> <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Clay Boswell</td><td>1, 2, 3, 4</td></tr> <tr> <td>Syl Laskin</td><td>1, 2</td></tr> <tr> <td>Taconite Harbor</td><td>1, 2, 3</td></tr> </table>	Plant	Boiler ID#	Clay Boswell	1, 2, 3, 4	Syl Laskin	1, 2	Taconite Harbor	1, 2, 3	40 CFR Section 76.11
Plant	Boiler ID#								
Clay Boswell	1, 2, 3, 4								
Syl Laskin	1, 2								
Taconite Harbor	1, 2, 3								
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)								
Apply for Acid Rain Program Permit reissuance: The 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)								
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								
PERFORMANCE TESTING	hdr								
<p>Initial Performance Test: due 270 days after Initial Startup of EU 002 after completion of LNB and OFA modifications to determine the CO emission factor on a lb/mmBtu basis, if EU 002 is the first boiler modified. If EU 002 is the second boiler modified, the initial performance test shall be completed within 60 days after initial startup after the modification. Separate tests shall be conducted for sub-bituminous coal and bituminous coal.</p> <p>The Permittee may avoid EU 002 bituminous coal testing if the Permittee does not burn any bituminous coal in EU 002 after LNB and OFA modifications.</p>	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1								
Performance Test: due before end of each 60 months following Initial Performance Test to determine compliance with the particulate matter emissions 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								
<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 2.A. and 3.B.								

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

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<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 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% of 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
MONITORING AND RECORDKEEPING	hdr
<p>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.</p>	Minn. R. 7007.0800, subp. 2
<p>Excess emissions and monitoring system performance reports shall include the information required in 40 CFR Sections 60.7(c) and (d). MPCA supplied forms DRF-1 and DRF-2 may be used to meet this requirement.</p>	Minn. R. 7007.0800, subp. 2
<p>EU 002 CO Emissions Indicator Monitoring and Recordkeeping: The Permittee shall install, operate, and maintain a process CO monitor (ppm monitor primarily for the boiler operator) upstream of the EU 002 air heater, and record the indicator measurements. The monitoring and recordkeeping equipment shall be operated and maintained at all times during EU 002 operation.</p> <p>CO concentration will not exceed a value based on values recorded during the most recent MPCA-approved performance test. The measurement frequency and averaging period associated with this emissions indicator will be derived by the Permittee through analysis of the correlation between indicator readings and the first performance test results. The results of the analysis will be summarized in a CO monitoring plan to be submitted to the Agency for approval within 120 days after the first performance test.</p>	Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000

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

09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

<p>EU 002 CO Emissions Monitoring and Recordkeeping: If the Permittee elects or is required to meet the 630 tpy (on a 12-month rolling sum basis) limit in GP 001, by the last day of each month commencing with the month of initial startup of the first boiler after LNB and OFA modifications are completed, the Permittee shall:</p> <ol style="list-style-type: none"> 1. calculate and record EU 002 monthly fuel usage of bituminous and sub-bituminous coal; 2. calculate and record monthly EU 002 CO emissions using the following equation: $\text{EU 002 CO} = (\text{FU} * \text{HC} * \text{EF}) / 2000$ <p>where:</p> <p>EU 002 CO = monthly EU 002 CO emissions for each coal type (tons) FU = EU 002 monthly fuel consumption for each coal type (tons) HC = fuel heat content for each coal type (mmBtu/ton) EF = current EU 002 CO emission factor for each coal type (lb/mmBtu)</p> <p>If EU 002 is the second boiler modified, the CO factor prior to modification shall be 0.108 lb/mmBtu.</p> <p>(continued below)</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>
<p>EU 002 CO Emissions Monitoring and Recordkeeping (continued from above)</p> <p>If EU 002 is the first boiler to be modified, the Permittee shall use 0.126 lb/ mmBtu for the CO emission factor until receipt of written MPCA approval of the EU 002 CO emission factor evaluation stack test results. After receipt of approval, the Permittee shall use the CO factor determined during EU 002 testing.</p> <p>If EU 002 is the second boiler to be modified, the Permittee shall use the MPCA-approved EU 001 CO emissions factor, if available, until EU 002 testing is completed and written approval is received from the MPCA to use the EU 002 CO factor determined during EU 002 testing.</p> <p>If the EU 001 factor is not available and/or was not approved, the Permittee shall use the default 0.126 lb/mmBtu CO factor until receipt of written MPCA approval of EU 002 CO emission factor testing results.</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>
<p>EU 002 Bituminous Coal CO Monitoring: If the Permittee combusts bituminous coal after LNB and OFA modifications, the Permittee shall calculate bituminous coal CO emissions using the EU 002 subbituminous coal CO emission factor until receipt of written MPCA confirmation of the EU 002 bituminous coal CO test results.</p> <p>After receipt of written MPCA confirmation of the EU 002 bituminous coal CO test results, the Permittee shall determine EU 002 bituminous coal CO emissions using the approved EU 002 bituminous coal emission factor. The Permittee shall also recalculate EU 002 bituminous coal CO emissions that were initially determined using the subbituminous coal CO emission factor, using the approved EU 002 bituminous coal emission factor.</p>	<p>Title I Condition: To avoid major modification under 40 CFR Section 52.21(b) and Minn. R. 7007.3000</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Minnesota Power - Laskin Energy Center
Permit Number: 13700013 - 005

Subject Item: EU 003 Coal Crusher

Associated Items: CE 003 6% or Greater Moisture Content
SV 002

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet 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)

TABLE B: SUBMITTALS

B-1 09/18/06

Facility Name: Minnesota Power - Laskin Energy Center
Permit Number: 13700013 - 005

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:

AQ Permit Technical Advisor
Industrial 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:

AQ Compliance Tracking Coordinator
Industrial 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**B-2** 09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before 05/12/2002. This requirement has been fulfilled for reissuance of the part 70 operating permit No. 13700013-001 issued 05/12/1997.	Total Facility
Fugitive Control Plan	due 60 days after Permit Issuance. This shall be a revision and update to the plan submitted in 1997. The revision shall identify all fugitive emission sources, primary and contingent control measures, and the records kept to demonstrate implementation of the plan.	Total Facility
Monitoring Plan	<p>due 120 days after Initial Performance Test for CO emissions after completion of LNB and OFA modifications. This is a periodic monitoring plan that shall meet the requirements of 40 CFR Section 70.6(a)(3). The Permittee shall implement the plan upon MPCA plan approval.</p> <p>The plan shall include the CO concentration that will not be exceeded based on values recorded during the most recent MPCA-approved performance test, and shall specify a measurement frequency and averaging period for the CO ppm emissions indicator.</p>	EU001, EU002
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of each modified boiler (LNB and OFA). This notification is due 15 days after any fuel is fired in the boiler after the modifications are completed in the boiler.	EU001, EU002
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA) .	SV001
Testing Frequency Plan	due 60 days after Initial Performance Test for EU 001 CO emission factor evaluation. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests for each coal type on 12-month, 36-month, or 60-month intervals, or as appropriate, shall be required upon written approval of the plan by the MPCA.	EU001
Testing Frequency Plan	due 60 days after Initial Performance Test for EU 002 CO emission factor evaluation. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests for each coal type on 12-month, 36-month, or 60-month intervals, or as appropriate, shall be required upon written approval of the plan by the MPCA.	EU002

TABLE B: RECURRENT SUBMITTALS**B-3** 09/18/06

Facility Name: Minnesota Power - Laskin Energy Center

Permit Number: 13700013 - 005

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 starting 05/12/1997 (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.	SV001
Linearity Test Results Summary	due 30 days after end of each calendar quarter following Linearity and Leak Check Test (Acid Rain Program) if performed.	SV001
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	SV001
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit .	SV001
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification Report (Acid Rain Program)	due 60 days after end of each calendar year starting 01/01/2000 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 Sections 72.90(b) and (c).	EU001
Compliance Certification Report (Acid Rain Program)	due 60 days after end of each calendar year starting 01/01/2000 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 Sections 72.90(b) and (c).	EU002
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). Submit the certification on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This certification covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Minnesota Power - Laskin Energy Center
Permit Number: 13700013-005

Phase II NOx 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	Syl Laskin Plant Name	MN State	1891 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#	ID#	ID#	ID#
T	T				
Type	Type	Type	Type	Type	Type

(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for <u>Phase I</u> dry bottom wall-fired boilers)						
(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for <u>Phase I</u> tangentially fired boilers)						
(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)						
(d) Standard annual average emission limitation of 0.46						

lb/mmBtu (for Phase II dry bottom wall-fired boilers)						
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)						
(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)						
(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)						
(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)						
(i) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)						
(j) NOx Averaging Plan (include NOx Averaging form)	X	X				
(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 NOx Averaging (check the NOx Averaging Plan box and include NOx 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 NOx Averaging Plan

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

This submission is: New ☐ ☒ Revised

Step 1

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

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

Step 2

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

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

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

0.40

0.40

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

Where,

R_{Li} = Alternative contemporaneous annual emission limitation unit i, in lb/mmBtu, as specified in column (b) of Step 1:
 R_{ii} = 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 2004 through calendar year 2007 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

Syl Laskin	MN	1891
Plant Name	State	ORIS Code

Compliance Plan

[illegible]

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. 13700013-005

This Technical Support Document (TSD) is for all parties interested in the permit and meets the requirements of 40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1. This document provides the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 4911)
Minnesota Power Division of ALLETE, Inc. 30 West Superior Street Duluth, MN 55802-2093	County Road 633 Aurora St. Louis County
Contact: Brandon Krogh Senior Engineer 218-723-3954	

1.2. Facility Description

This facility is composed of two electric utility steam boilers, each rated at 660 mmBtu/hr. Each boiler has twelve 4 mmBtu/hr gas/oil-fired ignitors. Each boiler vents emissions to a high-efficiency wet scrubber that discharges to the atmosphere through a common stack. The scrubbers control PM, PM₁₀, SO₂, and lead. Net electric production is 55 MW per boiler.

Boiler ratings were previously listed as 660 mmBtu/hr for bituminous coal and 525 for sub-bituminous coal. However, the Permittee states the 525 mmBtu/hr capacity was measured in the 1980s using old wet sub-bituminous coal, and that 660 mmBtu/hr can be achieved when combusting dry sub-bituminous coal.

1.3 Description of the Activities Allowed by this Permit Action

This permit is a major amendment to a part 70 operating permit (that expired May 12, 2002, but is continued due to timely submittal of a reissuance application). This project is one of the Permittee's Arrowhead Regional Emissions Abatement (AREA) emission reduction projects. Minnesota Power proposes to install low-NO_x burners (LNB) and overfire air (OFA) controls on the two identical boilers at their Laskin Energy Center, to reduce NO_x emissions. The Permittee plans to make the modifications to unit #2 (EU 002) during a scheduled outage in fall 2006, and then modify unit #1 (EU 001) during a scheduled outage in spring 2007.

These are voluntary emission reductions not required by rule or statute. The Permittee has received approval from the Minnesota Public Utilities Commission to recapture costs associated with the project from its customer base.

A collateral increase in CO emission is anticipated. In the past (prior to the June 24, 2005, appeals court vacating that portion of the PSD rule), this project would have avoided PSD permitting because it would have qualified for the pollution control project exemption and would not have been a modification.

However, this exemption no longer exists and therefore the source must obtain the appropriate permit for the proposed changes.

The Permittee has obtained turnkey contractor (Foster Wheeler) emission guarantees for NO_x (0.20 lb/mmBtu) and CO (20 ppm over baseline measured upstream of the inlet to the air preheater) emissions for the modification. The proposed NO_x lb/mmBtu emission limit is the turnkey contractor guarantee, and the proposed CO lb/mmBtu emission factor is 11.5 ppm over the baseline CO emission concentration. The projected actual CO emissions increase should remain under 100 tpy, after excluded emissions are accounted for. A separate calendar year CO limit of 738 tpy will restrict existing potential to future potential CO emissions from exceeding the 100 tpy Minnesota environmental review threshold.

The Permittee was initially willing to submit an application for a PSD major modification, in order to avoid concerns about potential sham permitting if the post-modification future actual CO increase exceeds the 100 tpy PSD significant level. However, based on discussions with EPA Region V staff in St. Paul on May 18, 2006, EPA indicated sham permitting would not be an issue if the future CO increase is significant (providing the facility post-modification CO emissions increase doesn't exceed 100 tpy until the Permittee obtains a PSD major modification permit authorizing the increase). This is because the Permittee has attempted to the best of its ability to accurately determine future actual emissions, the proposed non-major permit amendment limits the increase to less than the CO significant level, and there is inherent uncertainty in the CO emission changes that occur when retrofitting 50 year old boilers with new burners and overfire air controls.

1.4. **Facility Emissions:**

Table 1a. Title I Emissions Increase Summary based on Future Projected Actuals

Pollutant	Potential Emissions Increase from Modification (tpy) ¹	Limited Emissions Increase from Modification (tpy) ¹	PSD Significant Thresholds for major sources (tpy)	PSD Review Required? (Yes or No)
PM	-1	0	25	NO
PM ₁₀	0	0	15	NO
NO _x	-2149	-1658	40	NO
SO ₂	0	0	40	NO
CO	104	80	100	NO
Ozone (VOC)	0	0	40	NO
Lead	0	0	0.6	NO

¹includes credits for excluded emissions; limited increase based on FPA @8,921,115 mmBtu annual heat rate

Table 1b. Title I Emissions Increase Summary based on 10 million mmBtu

Pollutant	Potential Emissions Increase from Modification (tpy) ²	Limited Emissions Increase from Modification (tpy) ²	PSD Significant Thresholds for major sources (tpy)	PSD Review Required? (Yes or No)
PM	-1	0	25	NO
PM ₁₀	0	0	15	NO
NO _x	-2149	-1859	40	NO
SO ₂	0	0	40	NO
CO	104	90	100	NO
Ozone (VOC)	0	0	40	NO
Lead	0	0	0.6	NO

²includes credits for excluded emissions; limited increase based on FPA @10 million mmBtu annual heat rate

Table 2. Total Facility Limited Potential to Emit Summary³

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Total HAP
Total Facility Limited Potential Emissions after modification	165	195	2046	1000	630	16	56.8
Total Facility Actual Emissions (2004)	132	156	1615	2298	106	12.7	HAPs not reported in emission inventory

³Limited emissions based on 12-month rolling sum 630 tpy CO emission limit @10,000,000 mmBtu annual heat rate excluding insignificant sources; includes limited EU 003 PM and PM₁₀ emissions; HAPs based on PER 001 data and 10⁶ mmBtu annual heat input

Table 3. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	PM, PM ₁₀ , SO ₂ , NO _x , CO		VOC
Part 70 Permit Program	PM ₁₀ , SO ₂ , NO _x , CO		VOC
Part 63 NESHAP	Single & Total HAP		

2. Regulatory and/or Statutory Basis

New Source Review

The facility is an existing major source under New Source Review regulations. Changes authorized by this permit will not change this status.

Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

There are no NESHAPS applicable to the operations at this facility.

Minnesota State Rules

The two steam-electric boilers are subject to PM, SO₂, and opacity limits in Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment. The coal crusher is subject to the PM and opacity limits in Minn. R. 7011.0715.

Table 4. Regulatory Overview of Units Affected by the Modification/Permit Amendment

EU, GP, or SV	Applicable Regulations	Comments:
GP 001	Title I Condition: to avoid major modification under §52.21 and/or §52.21(r)(6) for CO	GP 001 CO limits, monitoring, and recordkeeping to avoid PSD and Minnesota Environmental Review requirements.
SV 001	Minn. R. 7009.0020	SO ₂ limit (lower than applicable performance standard) based on title V modeling. This is a state-only requirement not enforceable by the EPA Administrator or citizens under the Act.
EU 001 and EU 002	Title I Condition: to avoid major modification under § 52.21 and/or §52.21(r)(6) for CO Minn. R. 7007.0800, subp. 2; this is a state-only requirement not enforceable by the EPA administrator or citizens under the Clean Air Act	0.126 lb/mmBtu CO emission factor, monitoring, recordkeeping, and testing 0.20 lb/mmBtu NO _x limit

3. Technical Information

Permit Revisions Not In The Scope Of This Project

The following revisions were made to the draft permit that were not in the scope of this AREA project or in the Permittee's application:

- Removed title V modeling requirements because these have been completed
- Removed requirement to submit a report specifying indicators that will be used to verify that each boiler operating level is in compliance with the limit, because there is only a common COMS on the common stack (this report was submitted; it said that the boilers are identical, the scrubbers for each boiler are operated and maintained in a similar fashion and therefore the emissions are expected to be similar for each unit as measured by the COMS; this is supported by the COMS measurements taken during occasional single unit operating periods)
- Added Title V modeling-based SO₂ limit to SV 001

- Added major NSR source total facility requirements for determining if future projects are subject to NSR
- Added requirement to update the fugitive dust control plan
- Revised total facility requirement for monitoring rotoclones that control dust from solid fuel handling because the rotoclones were replaced by fabric filters

Actual To Potential Actual Emissions Test:

In the past (prior to June 2005) this modification would qualify as a pollution control project. Now that the PCP provision of the PSD rule has been overturned by the US Court of Appeals, the proposed change is not exempt from NSR permitting.

The boilers are able to combust bituminous and subbituminous coal. Heat input capacity is rated at 660 mmBtu/hr. Total annual potential heat input is 11,563,200 mmBtu. Subbituminous coal is and will continue to be used as the primary fuel.

Baseline actual emissions and projected future actual emissions are attached in the emission calculations spreadsheet. Calendar years 2004 - 2005 is the 24-month baseline period from which the baseline actual emissions were determined. For CO, actual emissions are calculated using actual average fuel use and a CO emission factor of 0.108 lb/mmBtu determined during March 2006 performance testing.

Future emissions are calculated with the same emission factors as past actual emissions except for NO_x and CO (see the chart below under section 3.1 for emission factors used in actual and potential emission calculations). Future NO_x is based on the AREA NO_x limit of 0.20 lb/mmBtu. CO emissions are based on an emission factor of 0.126 lb/mmBtu derived from baseline CO testing in March 2006 and the turnkey contractor's CO ppm increase guarantee described on page 2 of this document.

Emissions from fugitive sources, as well as from startup, shutdown, and malfunction were not addressed in the ATPA test because the predicted utilization, dispatch order, and capacity of the boilers will not change as a result of the modifications. Therefore emissions from fugitive sources, startup, shutdown, and malfunction will also not change.

The Permittee's customer base is primarily industrial and this makes it difficult to predict demand growth. As a result, the Permittee estimated future actual emissions based on calendar year 2005 operations (8,921,115 mmBtu) because 2005 operations were the highest level in the past 30 years. At this heat input, the CO net emission increase is about 80 tpy. However, a future actual annual heat input of 10,000,000 mmBtu will yield a net CO emissions increase of 90 tpy which is still below the CO significant level of 100 tpy. See the section titled 'New Source Review Permit Requirements' below for a discussion of the two permit options for limiting the CO net emissions increase to less than 100 tpy.

Excluded Emissions:

In the PSD rule at 40 CFR § 52.21(b)(41)(ii)(c), it says the Permittee *(c) Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under paragraph (b)(48) of this section and that are also unrelated to the particular project, including any increased utilization due to product demand growth;*

As stated above, the Permittee used calendar years 2004 and 2005 as the baseline period to determine past actual emissions. The Permittee also stated that 2005 electric generation was the highest annual generation rate for the past 30 years, there is little residential electric demand growth in this part of Minnesota, and industrial users are the primary consumer of electricity generated by the Permittee. As a

result, the Permittee assumed that excluded emissions that could have been accommodated by the existing (unmodified) units are equal to the difference between calendar year 2005 emissions and the average emissions for the 2004-2005 baseline period. Below is the Permittee's method for determining the excluded emissions.

Table 5. Excluded Emissions

Pollutant	EF _O	EF _O Units	THRU _{FPA}	THRU _{FPA} units	THRU _{PA}	THRU _{PA} units	Exclusions (tpy)
PM	0.033	lb/mmBtu	8,921,115	mmBtu/yr	8,440,231	mmBtu/yr	7.9
PM ₁₀	0.039	lb/mmBtu	8,921,115	mmBtu/yr	8,440,231	mmBtu/yr	9.4
SO ₂	7.700	lb/ton	474,000	ton/yr	448,450	ton/yr	98.4
NO _x	0.572	lb/mmBtu	8,921,115	mmBtu/yr	8,440,231	mmBtu/yr	137.5
VOC	0.06	lb/ton	474,000	ton/yr	448,450	ton/yr	0.8
CO	0.108	lb/mmBtu	8,921,115	mmBtu/yr	8,440,231	mmBtu/yr	26.0
Lead	0.0093	lb/ton	474,000	ton/yr	448,450	ton/yr	3.3E-02
H ₂ SO ₄	8.515E-04	ton/ton SO ₂	1,841	tons SO ₂ /yr	1,728	tons SO ₂ /yr	9.6E-02
Mercury	2.40E-06	lb/mmBtu	8,921,115	mmBtu/yr	8,440,231	mmBtu/yr	5.8E-04
Beryllium	8.10E-05	lb/mmBtu	8,921,115	mmBtu/yr	8,440,231	mmBtu/yr	1.9E-02
Flourides	0.15	lb/ton	474,000	ton/yr	448,450	ton/yr	1.9

Excluded Emissions = EF_O * (THRU_{FPA} - THRU_{PA})

EF_O = Emissions factor for pollutant, before modification

THRU_{FPA} = Total Annual Future Projected Actual Throughput (based on 2005 throughput)

THRU_{PA} = Annual Average Throughput During Baseline Period (calendar years 2004 and 2005)

H₂SO₄ determined using Southern Company method

Note that excluded emissions are also calculated for the 10 million mmBtu/year future projected actual emissions scenario related to the 630 tpy CO option 2 limit.

New Source Review Permit Requirements:

The Permittee has two options for demonstrating the CO emissions increase is not significant under §52.21. Two options are available because the first option has reduced recordkeeping compared to the second option. A CO emissions factor performance test on each unit is required regardless of the option selected.

The first compliance option requires the Permittee to conduct the monitoring, recordkeeping and reporting requirements described at § 52.21(r)(6), if the CO performance test on each unit demonstrates that CO emissions do not exceed the Title I 0.126 lb/mmBtu emission factor in the permit. If the Permittee can demonstrate this, the Permittee will not be subject to a 12-month rolling sum limit necessary to avoid a CO increase in excess of 100 tpy. In addition, the Permittee will only be subject to the requirements at § 52.21(r)(6) for a ten year period as stated at § 52.21(r)(6)(c)(iii).

The second compliance option applies if the Permittee can not demonstrate that the CO emission factor for EU 001 or EU 002 does not exceed 0.126 lb/mmBtu, or if the Permittee desires to be subject to the 12-month rolling sum limit regardless. With this option, the Permittee will be subject to a Title I 630 tpy (12-month rolling sum basis) CO limit to restrict the CO emissions increase from the modification to less than the significant level. In addition, the Permittee will be subject to on-going monitoring, recordkeeping, and reporting.

Post-Modification Shakedown Period:

The Permittee requested a 270 day shakedown period after initial startup after completion of modifications before the first modified unit becomes subject to the 0.20 lb/mmBtu NO_x limit. The Permittee stated that these boilers are over 50 years old and there may be un-anticipated problems with making the modifications, and therefore they requested this longer than normal (i.e. 180 day) shakedown period. However, the second boiler modified will become subject to the 0.20 lb/mmBtu NO_x limit 60 days after initial startup following completion of modifications.

Tribal Contacts

This facility is in St. Louis County where the following Native American tribes are also located:

Fond du Lac -- (218) 878-8008 Joy Wiecks: M. Cole called and left a voice mail message on June 1, 2006, briefly describing the project (LNB and OFA) and NO_x emission reductions and CO increases. Message said to call M. Cole if more information is desired before public notice. M. Cole did not receive a return call.

Bios Forte -- (218) 757-3543 Darin Steen: M. Cole called June 1, 2006, and left a message regarding the Laskin AREA project, stating if Mr. Steen wants more information before the public notice, to contact M. Cole. M. Cole did not receive a return call.

CAM Applicability

The Permittee uses add-on controls to reduce emissions of PM, PM₁₀, and SO₂ and is subject to PM and SO₂ emission limits. CAM for SO₂ is met by the use of CEMS that measure these pollutants. This permit action does not pertain to PM or PM₁₀ emissions and therefore, pollutant-specific PM₁₀ CAM requirements are not required to be included in the permit application (and therefore not required to be added to the permit at this time) as stated in 40 CFR §64.5(c).

3.1 Emission Analysis and Calculations

Current boiler capacity (660 mmBtu/hr) and level of operation are not expected to change due to this modification. Therefore, emissions from the coal crusher (EU 003), solid fuel handling, boiler startup, shutdown, and malfunction, and fugitive emissions are not anticipated to change due to this modification.

Emissions Calculations Pertaining To New Source Review Permitting

Existing actual emissions were calculated using CEMS data (SO₂ and NO_x), stack test data for CO (March 2006) and PM and PM₁₀ (2002), and AP-42 factors for VOC and lead emissions.

Future actual emissions were calculated using the projected actual annual heat input (8,921,115 mmBtu) listed in table 5 above and an SO₂ factor back-calculated from CEMS data, the NO_x AREA limit of 0.20 lb/mmBtu, a CO factor of 0.126 lb/mmBtu for avoiding a significant emissions increase, and 2002 stack test data for PM and PM₁₀. VOC and lead emissions were calculated using AP-42 factors. Future Title I potential emission changes in Tables 1a. and 1b. on page 2 of this document were calculated using the same emission factors and the PTE heat input rate of 11,563,200 mmBtu. Limited potential emissions in table 2 were calculated using the same factors and a heat input rate of 10,000,000 mmBtu (plus limited PM and PM₁₀ from EU 003, coal crusher)

Emissions Calculations Pertaining To Minnesota Environmental Review Requirements

Existing potential and future potential emissions were calculated using AP-42 factors except for existing potential CO and future potential CO and NO_x. For existing potential emissions, CO was calculated

using March 2006 stack test results. For future potential emissions, CO was calculated using 0.126 lb/mmBtu and NO_x was calculated using the 0.20 lb/mmBtu performance guarantee.

The following table summarizes the various factors and their sources.

Table 6. Emission Factors Used In Actual and Potential Emissions Calculations

Pollutant	Uncontrolled Emission Factors and Factor Sources							
	Subbituminous Coal				Subbituminous and Bituminous Coal			
	Past Actual lb/mmBtu except as noted	factor source	Future Actual lb/mmBtu except as noted	factor source	Existing Potential lb/ton	factor source	Future Potential lb/ton	factor source
PM	0.033	2002 test	0.033	2002 test	55.80	AP-42	55.80	AP-42
PM ₁₀	0.033	2002 test	0.033	2002 test	13.39	AP-42	13.39	AP-42
SO ₂	CEMS		7.70 lb/ton per CEMS		26.98	AP-42	26.98	AP-42
NO _x	CEMS		0.20	AREA limit	15.00	AP-42	0.20 lb/mmBtu	existing = AP-42 future=AREA limit 0.20 lb/mmBtu
CO	0.108	2006 test	0.126	permit emission factor	2.84	2006 test	3.31	existing= AP-42 future=CO factor 0.126 lb/mmBtu
VOC	0.06 lb/ton	AP-42	0.06 lb/ton	AP-42	0.06	AP-42	0.06	AP-42
lead	0.0093 lb/ton	AP-42	0.0093 lb/ton	AP-42	0.0093	AP-42	0.0093	AP-42

Subbituminous coal factors are used for past and future actual emissions because this is the type of coal combusted by the facility boilers. The boilers are able to combust bituminous coal, and bituminous coal is worst case for existing and future potential SO₂ emissions and existing potential NO_x emissions. Therefore, existing and future potential emissions are calculated using subbituminous coal emission factors for all pollutants except SO₂.

3.2 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;

- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 7 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 7. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP 001, EU 001, and EU 002	NO _x ≤ 0.20 lb/mmBtu Minn. R. 7007.0800, subp. 2	none	NO _x is measured by a CEMS on the common stack SV 001
	Title I Condition to avoid major modification under §52.21 CO emission factor ≤ 0.126 lb/mmBtu OR CO ≤ 630 tpy on a 12-month rolling sum basis	CO stack testing to verify CO emission factor, CO ppm emissions indicator, and monthly calculation of 12-month CO emissions if factor > 0.126 lb/mmBtu	The Permittee has two options for demonstrating the CO emissions increase is not significant. The first option requiring the verification of the CO factor has less recordkeeping than the second option of meeting a 12-month rolling sum CO limit. Both options will restrict the CO to less than the 100 tpy significant level.

3.3 Comments Received

Public Notice Period: July 28, 2006 - August 28, 2006

EPA 45-day Review Period: July 28, 2006 - September 12, 2006

Revisions made during and after public comment period: The GP 001 738-ton-per-calendar-year CO limit to avoid environmental review includes a condition that suspends the limit if the CO factor measured during a stack test is measured at or below 0.124 lb/mmBtu, and reinstated if a stack test measures CO above 0.124 lb/mmBtu. However, the public noticed version of the draft/proposed permit contained a typographical error. The error resulted in exclusion of the 0.124 lb/mmBtu value by stating the limit was suspended if CO is measured less than 0.124 lb/mmBtu and reinstated if CO is measured above 0.124 lb/mmBtu. It is reasonable to allow the suspension of the 738 tpy limit if CO is as high as 0.124 lb/mmBtu, which was the intent of the permit writer, because the 738 tpy limit is based on 0.126 lb CO/mmBtu. No comments were received from the public or EPA.

4. Conclusion

Based on the information provided by Minnesota Power Division of ALLETE, Inc., the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission

Permit No. 13700013-005 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Marshall Cole (permit writer/engineer)
 Bob Beresford (enforcement)
 Andy Place (stack testing)
 John Chikkala (peer reviewer)

Attachments: 1. Emission Calculation Spreadsheets