AIR EMISSION PERMIT NO. 13700015- 003

IS ISSUED TO

Allete/Minnesota Power & the City of Duluth

Duluth Steam District #2/Hibbard Energy Center
50th Avenue West & Main Street
Duluth, St. Louis County, MN 55807

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

Permit Type	Application Date
Total Facility Oper. Permit - Reissuance	January 14, 2002

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

Permit Type: Federal; Pt 70/Incorporates Existing NSR Conditions

Issue Date: August 15, 2006

Expiration: August 15, 2011
All 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.

FACILITY DESCRIPTION:

The Duluth Steam District No. 2/Hibbard Energy Center (DSD#2/HEC) steam and power generating facility is jointly owned by Minnesota Power (MP) and the City of Duluth. Boilers 3 & 4 and their associated equipment are owned by the City of Duluth, whereas MP owns the remaining portion of the facility. Located in the City of Duluth, adjacent to the Stora Enso North America (SENA) paper mill, the facility combusts a mixture of wood, coal, natural gas and paper mill sludge. The primary mission of the facility is to produce steam for SENA and its associated paper recycling facility. The facility (HEC portion) is also capable of producing electrical energy for the MP system. The site contains four steam generating boilers, four steam turbines, coal handling facilities, wood handling facilities, a 3.4 million gallon fuel oil storage tank and natural gas supply lines. The two oldest boilers and their associated turbine-generators (Boilers No. 1 and No. 2), and the fuel oil supply tank have been out of service since 1981, but can be used if future plans were to change.

All operations and equipment within the facility boundary are established to: (1) provide steam and/or electrical power for on-site and off-site utilization; (2) provide fuel for steam and/or electrical power production or support activities; (3) monitor and control air emissions generated from electrical power production; (4) handle waste heat, wastes and materials produced from the on-site operations; and (5) provide support activities. The description of these operations and equipment are described below.

Steam and Power Generation

Steam and power generation is accomplished primarily through steam generation in two boilers (Boilers No. 3 and No. 4). Both units have spreader stokers and traveling grates. Emissions are discharged through a common 331 foot stack (Stack No. 1). Boilers No. 1 and No. 2 are smaller units and if used would also discharge air emissions through Stack No. 1.

Fuel for Steam and Power Generation and Support Equipment/Activities

Boilers No. 3 and No. 4 are capable of combusting a mixture of wood, sub-bituminous coal, natural gas and sludge. The primary fuel is wood which may include wood chips, sawdust, sanderdust, wood bark, chipped railroad ties and other various forms of waste wood from regional suppliers. The wood fuel is supplemented with low-sulfur, sub-bituminous coal and natural gas. Boilers No. 3 and No. 4 are capable of combusting wood, coal, and various combinations of wood, coal, and natural gas. This permit allows for the addition of oily coal (coal with oil spilled on it), oily cellulose-based sorbents (including rags), activated charcoal, boiler cleaning agents, and cellulose fill from mattress recycling as permitted fuels.

The wood fuel is delivered directly to the plant in covered trucks, unloaded and conveyed directly to the A-frame storage building. The wood fuel is conveyed to the wood metering bins and transferred to the boiler's traveling grate through the auger feed and spreader stoker systems. Combustion occurs in suspension and on the grate.

Coal is delivered to the facility in trucks and unloaded in a three sided enclosure maintained at negative pressure and vented through a fabric filter. Coal is transferred from the unloading facility to storage bunkers by a bucket conveyor system. Air from the bunkers and coal transfer system is vented through a fabric filter. Coal transfer from the bunker to the boilers is accomplished by a totally enclosed conveyor.

Natural gas is supplied to Boilers No. 3 and No. 4 through a pipeline. Natural gas could be supplied to Boilers No. 1 and No. 2 by the same system.

If used in the future as fuel, oil would be delivered by truck and stored in the 3.4 million gallon tank. Piping which would connect the fuel oil storage to the boilers is disconnected.

Air Emission Monitoring and Control

Air emissions from the facility are released primarily as a result of the combustion of wood and coal. Smaller amounts of criteria pollutants are emitted from the combustion of natural gas and the handling and storage of coal and wood fuels. The combustion of wood and coal also results in the emission of some hazardous air emissions.

Continuous Emission Monitors have been installed, tested and certified to measure and record the combustion emissions from Boilers No. 3 & No. 4 exiting via the common stack, Stack No. 1. The monitors measure and record information on the following parameters: Sulfur Dioxide, Nitrogen Oxides, opacity, Carbon Monoxide, Carbon Dixoide, and volumetric flow and are located in the breaching leading to the stack.

Particulate emissions from Stack No. 1 due to combustion in Boilers No. 3 and No. 4 are controlled by multiple cyclones in series with an electrostatic precipitator for each unit. Boilers No. 1 and No. 2 do not have associated pollution control equipment. Particulates from coal unloading, transfer, and storage are controlled with fabric filter baghouses. Additional particulate control is accomplished through the use of enclosures to limit fugitive emissions from coal and wood unloading operations.

Waste Heat, Wastes, and Materials

The Hibbard portion of the facility is designed to operate with a once-through cooling system to dissipate waste heat in the production of electrical energy. Water from St. Louis Bay is pumped through the intake structure, used to condense steam from the back side of the turbine generator and discharged to the bay.

The combustion of wood and coal also produces ash, which is collected off the traveling grates, wetted and transferred to a truck. The ash is used as agricultural soil enhancement or is landfilled.

Support Activities

Support activities include the building elevator, vehicle maintenance, general facility activities, energy production equipment maintenance, piping installation and maintenance. These activities can include painting, welding, and cleaning operations. In terms of air emission regulations, these activities are considered insignificant activities for these purposes.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Minnesota Power Inc - ML Hibbard

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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
SOURCE-SPECIFIC REQUIREMENTS	hdr
Comply with the Fugitive Control Plan: The Permittee shall follow the actions and recordkeeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0150; Minn. R. 7009.0020.
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr
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. 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.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000
Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following information: 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. The Permittee shall maintain records of this documentation.	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
For any project which includes any EUSGU, the Permittee must submit an annual report to the Agency, within 60 days after the end of the calendar year. The report shall contain: a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The quantified annual emissions analyzed using the ATPA test, plus the potential emissions associated with the same project 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

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: 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.	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply and upon written request demonstrate compliance, with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, supbs. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0100-7009.0080.
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, supb. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 & subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
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
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 only requirement 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)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Coal handling: not to exceed 241,200 tons on a 12-month rolling sum. Coal handling operations limited to 8 hours per day.	Title I Conditions: PSD total facility permit application & impacts and Minn. R. 7007.3000
Wet all ash and cover ash haul trucks leaving the facility.	Minn. R. 7007.0800, subp. 2
Cover all wood hauling systems except for unloading.	Minn. R. 7007.0800, subp. 2
Access areas, roads, parking facilities All paved roads and areas shall be cleaned to minimize the discharge to the atmosphere of fugitive particulate emissions. Such cleaning shall be accomplished in a manner which minimizes resuspension of particulate matter. Access areas surrounding coal stockpiles and parking facilities which are located within a coal handling facility shall be treated with water or chemical agents.	Minn. R. 7011.1105

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Truck and hauler unloading stations: Control fugitive particulate emissions from the unloading of trucks or haulers by dust suppression methods so that emissions from such sources are minimized.	Minn. R. 7011.1105
Enclosed coal handling facilites or emissions units not specifically covered by any other provision in these parts. If exhaust gases from any enclosed coal handling facility exceed 20 percent opacity, then the owner or operator of such facility shall select and implement one of the following further controls: (1) install exhaust air system and control exhaust gases so that particulate emissions in such gases do not exceed 0.020 gr/dscf; (2) control exhaust gases using dust suppression methods so that particulate emissions do not exhibit greater than 20 percent opacity.	Minn. R. 7011.1105
Operating practices: Clean up all coal spilled on roads or access areas as soon as practicable using methods that minimize the amount of dust suspended. Maintain air pollution control equipment in proper operating condition and utilize air pollution control systems as designed.	Minn. R. 7011.1105
For all baghouses controlling emissions from enclosed coal handling equipment including those listed an insignificant activity: 1. Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection. 2. Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection. 3. Check visible emissions once every 48 hours. If visible emissions exist, inspect equipment for evidence of malfunction, including broken bags. Record the results of the inspection, and any action taken.	Minn. R. 7011.1105
Oily Floor Dry: Limit combustion to (for entire facility): 1) cellulose based only (including rags), 2) 25 tons per year, and 3) 1.25 tons per hour.	Title I Condition: to ensure that the emissions increase from the addition of the fuel type is less than significant as defined by 40 CFR Section 52.21; Minn. R. 7007.3000
Activated Charcoal: Limit combustion to (for entire facility): 1) material generated on site, material received from Stora Enso North America, or material received from other off-site facilities that is representative of the same material, 2) 25 tons per year, and 3) 3 tons per hour.	Title I Condition: to ensure that the emissions increase from the addition of the fuel type is less than significant as defined by 40 CFR Section 52.21; Minn. R. 7007.3000
PERFORMANCE TESTING	hdr
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
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - CD or Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Operating and/or production limits will be placed on emission units based on operating conditions during compliance testing. Limits set as a result of a compliance test (conducted before or after permit issuance) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025.	Minn. R. 7017.2025
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)

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RECORDKEEPING	hdr
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, fuel analyses and certifications, 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)
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping to demonstrate compliance with coal handling limit: By the 15th day of each month, the Permittee shall calculate and record the total coal handled in the previous month, and calculate and record the total coal handled during the previous 12-month period.	Title I Conditions: PSD total facility permit application & impacts analysis and Minn. R. 7007.3000
REPORTING	hdr
Shutdowns: Notify the Commissioner at least 24 hours in advance of shutdown of any process or control equipment, if the shutdown would cause an increase in the emission of air contaminants. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 1
Breakdowns: Notify the Commissioner immediately of a breakdown of more than one hour duration of any process or control equipment, if the breakdown causes an increase in the emission of air contaminants. At the time of notification or as soon thereafter as possible, the Permittee shall also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over. Shutdown and Breakdown Reporting Requirements for the Dust Collector Systems for Material Handling Equipment: Shutdowns and breakdowns shall be reported on a quarterly basis to the Agency. The quarterly report shall include an identification of the dust collector that broke down or was shutdown, the time and reason for the breakdown or shutdown, a description of any repairs made, and the date and time the dust collector was placed back in service.	Minn. R. 7019.1000, subp. 2
Oral Notification of Deviations Endangering Human Health or the Environment: Within 24 hours of discovery, orally notify the Commissioner of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7007.0800, subp. 6(A)
Discovery of Deviations Endangering Human Health or the Environment Report (written): due two working days after discovery of deviation, submit a written description of any deviation endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7007.0800, subp. 6(A)
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 Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill	Minn. R. 7002.0065

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Subject Item: **GP 001 Boilers 3 and 4**

Associated Items: EU 003 Boiler 3

EU 004 Boiler 4

MR 101 SO2 monitor - low range

MR 102 NOx monitor

MR 103 CO2 monitor

MR 104 SO2 monitor - high range

MR 107 flow monitor

MR 108 opacity monitor

What to do	Why to do it
TRIAL BURN REQUIREMENTS	hdr
Waste wood fuel limit: The Permittee may burn up to 28,500 tons of woodwaste consisting of rejects and/or trimmings consisting primarily of wood with some glues and/or adhesives and backings. After 28,500 tons are burned, if the Permittee wishes to continue burning waste wood as described herein, the Permittee shall determine what permit amendment (if any) is necessary to continue as outlined below.	Minn. 7007.0800, subp. 2
Notification/Reporting: The Permittee shall: 1) submit notification of the commencement of the trial burn, within 15 days of such date; 2) submit notification of the completion of the trial burn, within 15 days of such date; 3) complete a report within 180 days of the completion of the trial burn that examines the impact of burning waste wood as described herein on emissions using records from the CEM/COM equipment at the facility and other information. After the trial burn is complete, if the Permittee wishes to continue burning waste wood as described herein a permit applicability determination should be made using the information in the report required by # 3). If a permit amendment is necessary, a copy of this report shall be included with the application.	Minn. 7007.0800, subps. 5 and 6

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Subject Item: **EU 001 Boiler 1**

Associated Items: SV 001

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.01 lbs/million BTU heat input based on a 24-hour average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); most stringent, meets limit set by Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except up to 60% opacity for four minutes in any 60-minute period and up to 40% opacity for four additional minutes in any 60-minute period	Minn. R. 7011.0510, subp. 2
Sulfur Dioxide: less than or equal to 0.24 lbs/million BTU heat input on a one-hour average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k), ; most stringent, meets limit set by Minn. R. 7011.0510, subp. 1
Nitrogen Dioxide: less than or equal to 0.49 lbs/million BTU heat input on a 30-day rolling average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
Carbon Monoxide: less than or equal to 0.04 lbs/million BTU heat input on a one-hour average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
OPERATIONAL LIMITS	hdr
Fuel limited to No. 2 Fuel oil only, except natural gas may be used as necessary for initial firing only.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
No. 2 fuel oil shall have a minimum heating value of 136,598 Btu per gallon.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
No. 2 fuel oil shall have a maximum ash content of 0.00141 lbs ash per gallon.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
No. 2 fuel oil shall have a maximum sulfur content of 0.23% by weight.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
MONITORING, RECORDKEEPING AND REPORTING	HDR
The Permittee shall maintain records of No. 2 fuel oil sampling results or vendor certifications, for a minimum of 5 years.	Title I Condition: PSD permit application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
Collect and analyze a fuel oil sample from each delivery of fuel oil, or shall obtain and keep copies of vendor certifications from each delivery. The information from the vendor certification or analysis must give the fuel oil sulfur content, ash content, and heating value for the purposes of demonstrating compliance with the sulfur dioxide emission limit, the sulfur content limit, the ash content limit, and the minimum heating value limit. All analyses shall be completed no later than 30 days after the sampling date. Samples shall be collected from the fuel oil prior to the oil being placed in the storage tank. The sample shall be analyzed for sulfur wt%, heating value in Btu/lb, density in lb/gal, and ash content in wt%, following ASTM methods D-1552, D-240, D-1481, and D-482, respectively, or equivalent methods approved by the Commissioner.	Title I Condition: PSD permit application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
Notify: due 30 days after Startup . Written notification of startup is required to trigger the Initial Performance Test for Boiler No. 1.	Minn. R. 7007.0800, subp. 2
Initial Performance Test: due 180 days after Startup to determine compliance with the particulate matter emission limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Startup to determine compliance with the opacity limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Startup to determine compliance with the nitrogen oxides emission limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Startup to determine compliance with the carbon monoxide emission limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

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Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - CD or Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2.A. and 3.B.
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3.B.
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2
STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing: If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test. If performance test results demonstrate compliance at greater than 80% any applicable emision limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test. In no case will STET operation be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2
The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **EU 002 Boiler 2**

Associated Items: SV 001

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.01 lbs/million BTU heat input based on a 24-hour average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); most stringent, meets limit set by Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except up to 60% opacity for four minutes in any 60-minute period and up to 40% opacity for four additional minutes in any 60-minute period	Minn. R. 7011.0510, subp. 2
Sulfur Dioxide: less than or equal to 0.24 lbs/million BTU heat input on a one-hour average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); most stringent, meets limit set by Minn. R. 7011.0510, subp. 1
Nitrogen Dioxide: less than or equal to 0.49 lbs/million BTU heat input on a 30-day rolling average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
Carbon Monoxide: less than or equal to 0.04 lbs/million BTU heat input on a one-hour average	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
OPERATIONAL LIMITS	hdr
Fuel limited to No. 2 Fuel oil only, except natural gas may be used as necessary for initial firing only.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
No. 2 fuel oil shall have a minimum heating value of 136,598 Btu per gallon.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
No. 2 fuel oil shall have a maximum ash content of 0.00141 lbs ash per gallon.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
No. 2 fuel oil shall have a maximum sulfur content of 0.23% by weight.	Title I Conditions: PSD Permit Application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
MONITORING, RECORDKEEPING AND REPORTING	hdr
The Permittee shall maintain records of No. 2 fuel oil sampling results or vendor certifications, for a minimum of 5 years.	Title I Condition: PSD permit application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
Collect and analyze a fuel oil sample from each delivery of fuel oil, or shall obtain and keep copies of vendor certifications from each delivery. The information from the vendor certification or analysis must give the fuel oil sulfur content, ash content, and heating value for the purposes of demonstrating compliance with the sulfur dioxide emission limit, the sulfur content limit, the ash content limit, and the minimum heating value limit. All analyses shall be completed no later than 30 days after the sampling date. Samples shall be collected from the fuel oil prior to the oil being placed in the storage tank. The sample shall be analyzed for sulfur wt%, heating value in Btu/lb, density in lb/gal, and ash content in wt%, following ASTM methods D-1552, D-240, D-1481, and D-482, respectively, or equivalent methods approved by the Commissioner.	Title I Condition: PSD permit application and impacts analysis, 40 CFR Section 52.21(k); Minn. Rule 7007.3000
Notify: due 30 days after Startup . Written notification of startup is required to trigger the Initial Performance Test for Boiler No. 2.	Minn. R. 7007.0800, subp. 2
Initial Performance Test: due 180 days after Startup to determine compliance with the particulate matter emission limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Startup to determine compliance with the opacity limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Startup to determine compliance with the nitrogen oxides emission limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Startup to determine compliance with the carbon monoxide emission limit based on PSD modeling. Compliance shall be determined based on the average of three runs per Minn. R. 7017.2020, subp. 5.	Minn. R. 7017.2020, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - CD or Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2.A. and 3.B.
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3.B.
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2
STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing: If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test. If performance test results demonstrate compliance at greater than 80% any applicable emision limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test. In no case will STET operation be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2
The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **EU 003 Boiler 3**

Associated Items: CE 001 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 002 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 3 and 4

SV 001

What to do	Why to do it
Total Particulate Matter: less than or equal to (0.025x + 0.027y)/(x+y) lb/mmBtu based on a 24-hour average, where: x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu	Title I Conditions: Limit to restrict potential emission increases to less than significant as defined by 40 CFR Section 51.165 and 40 CFR Section 52.24. Also ensures compliance with 40 CFR Section 60.43b. Minn. R. 7007.4000 - 7007.4030
Opacity: less than or equal to 20 percent opacity using 6 Minute Average except for one 6-minute period per hour of not greater than 27% opacity.	40 CFR Section 60.43b(f) Minn. R. 7011.0565
Nitrogen Oxides: less than or equal to (0.6x + 0.4y +0.1z)/(x+y+z) lb/mmBtu based on a 30 day rolling average, where: x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu z = heat input from natural gas in mmBtu Once each hour, the Permittee shall use the NOx emission limit equation to calculate the effective NOx emission limit.	Title I Conditions: 40 CFR Section 52.21 BACT Limit; 40 CFR pt. 50. Also ensures compliance with 40 CFR Section 60.44b. Minn. R. 7007.3000
Carbon Monoxide: less than or equal to (0.35x + 0.45y + 0.04z)/(x+y+z) lb/mmBtu based on a one-hour average, where: x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu z = heat input from natural gas in mmBtu	Title I Conditions: 40 CFR Section 52.21 BACT Limit; 40 CFR pt. 50 Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to (2.03Sx + 0.17y)/(x+y) lb/mmBtu based on a one hour averaging period, where: S = the allowed sulfur content in coal in percent by weight determined by fuel sampling and analysis (see the following requirement for more detail) x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu Once each hour, the Permittee shall use the SO2 emission limit equation to calculate the effective SO2 emission limit.	Title I Conditions: 40 CFR Section 52.21 BACT Limit; 40 CFR pt. 50. Also ensures compliance with 40 CFR Section 60.43(a) Minn. R. 7007.3000
Limit of coal sulfur content (by weight): - 0.58% when burned alone or with natural gas or sludge, - may not exceed 0.9% at any time - When coal is being burned in combination with wood, the sulfur content limit shall vary as follows: S = 8.13 X rE S = allowable percent sulfur by weight r = coal feed rate in tons per hour. E = the exponent (-0.88) of "r" For use of this equation, r must be greater than or equal to 12. When r is less than 12, S = 0.9%.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
The Permittee shall only burn wood (including creosoted railroad ties), coal, natural gas, sludge from Stora Enso North America clarifier, oily cellulose-based sorbents (including oily rags), oily coal and oily wood (coal or wood with oil spilled on it), boiler cleaning agents, activated charcoal, hardboard rejects, and cellulose fill from mattress recycling in EU003. Other materials may be combusted in this emission unit for a short period of time during a trial burn as approved by an amendment to this permit.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Boiler cleaning agents burn requirements: agents must be EDTA type or Ammonium Bromate, agents generated on-site, maximum of 5% of total fuel mass input, oxygen must be 3% or greater, and agents may be burned only while the boiler is operating at 75 percent of rated capacity or greater. During the initial burn (after issuance of this permit) in EU 003 of boiler cleaning agents, the Permittee shall monitor CO and opacity emissions to deterimine the compliance status of CO and opacity emissions during the burn. Monitoring results for the initial burn shall be submitted to the Agency. If compliance with the EU 003 CO and opacity limitations is shown, CO monitoring is not required during subsequent boiler cleaning agent combustion events.	Minn. R. 7007.0800, subp. 2
Fuel usage limits: - 22 tons per hour for coal; - 67 tons per hour for wood; - 0.305 MMCF per hour for natural gas.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Fuel Sampling: The Permittee shall sample solid fuel as follows: 1) Daily composite sampling for wood fuel; and 2) sample one coal delivery each week according to the Permittee's sampling plans approved by the MPCA on November 18, 1987 (except the need for a duplicate gross 240 pound sample is not required).	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Fuel Analysis: The Permittee shall analyze solid fuel samples using ASTM methods or equivalent methods approved by the Commissioner. Samples shall be analyzed for the following parameters: Coal: Sulfur content in wt. %, heating value in Btus per lb. Wood: Heating value in Btus per lb. The average heating value for natural gas may be obtained from the vendor. The Permittee shall maintain the records of all analyses for a period of 5 years from the date of recording.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Maximum allowable heat input (based on 8-hour block averages): - 590 mmBtu/hour at any time - 380 mmBtu/hr from coal - 590 mmBtu/hr from wood - When wood fuel = 100% chipped railroad ties: maximum total heat input from all fuels = 326 mmBtu/hr, chipped railroad tie heat input shall not exceed 86% of total heat input, and coal heat input shall not be less than 14% of total heat input. - 305 mmBtu/hr from natural gas	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Total heat input shall be determined using the following equations: Total heat input to EU003 = x + y + z (not to exceed 590 mmBtu/hr) x = 380 - [(22-r) X (17.2)] y = 590 - [(67-s) X (8.8)] z = 305 - [(0.305-t) X (1000)] x= heat derived from the burning of coal over any hour in mmBtu y= heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu z= heat derived from the burning of natural gas over any hour in mmBtu r = coal feed rate to boiler in tons per hour s = wood feed rate to boiler in tons per hour t = natural gas feed rate to boiler in million cubic feet per hour	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Monitoring and Recordkeeping for fuel usage and heat input: The Permittee shall record the usage rate of each solid fuel on a daily basis, and calculate and record the hourly average fuel use for each solid fuel by dividing the daily fuel use by the number of hours of operation for that day. The Permittee shall measure the natural gas usage rate, in million cubic feet per hour, using a fuel meter. The Permittee shall calculate and record the heat input during any hour from each fuel, as well as the total heat input for that hour. Heat content value of solid fuel shall be obtained from fuel sampling as required in this permit. Heat content value of natural gas shall be obtained from the natural gas vendor. The Permittee shall maintain all fuel usage and heat input records for five years from the date of recording.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Record type and usage rate of each fuel on a daily basis, and calculate the hourly average fuel use for each fuel type by dividing the daily fuel use by the number of hours of operation for that day. Records shall be maintained for a minimum of 5 years.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000

Performance Test: due before end of each 60 months starting 04/01/2002 to determine compliance with the Title I particulate matter emission limit while burning coal, wood chips (including railroad ties), sludge, or any combination thereof. Tests shall be conducted at intervals not to exceed 60 months between tests. Particulate emissions testing shall be conducted in accordance with the procedures in 40 CFR Section 60.46b(d) and Minn. R. 7017.2001 - 7017.2060 so that test results can also be used to determine compliance with 40 CFR Section 60.43b.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months following Initial Performance Test to determine compliance with Title I CO emission limit while burning coal, wood chips (including railroad ties), sludge, or any combination thereof. Tests shall be conducted at intervals not to exceed 60 months between tests.	Minn. R. 7017.2020, subp. 1
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - CD or Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2(A) and 3(B)
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3(B)
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2
STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing: If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test. If performance test results demonstrate compliance at greater than 80% any applicable emision limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test. In no case will STET operation be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2

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The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4
CONTINUOUS EMISSION MONITOR REQUIREMENTS	hdr
The owner or operator of an affected facility (EU003) shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring and recording sulfur dioxide emissions.	40 CFR Section 60.45(a) Minn. R. 7011.0565
The owner or operator of an affected facility (EU003) shall install, calibrate, maintain, and operate a continuous monitoring system for measuring and recording nitrogen oxides emissions.	40 CFR Section 60.48b(b) Minn. R. 7011.0565
The owner or operator of an affected facility (EU003) shall install, calibrate, maintain and operate a continuous monitoring system for measuring and recording opacity emissions.	40 CFR Section 60.48b(a) Minn. R. 7011.0565
The Permittee shall use the data from the NOx CEM on SV001 to determine the 30-day rolling average NOx emission rate.	40 CFR Section 60.46b(e)(2) Minn. R. 7011.0565
The owner or operator shall measure opacity, and all SO2, NOx, and CO2 emissions for each affect unit in accordance with 40 CFR Section 75.10.	40 CFR Section 75.10; Minn. R. 7017.1020

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **EU 004 Boiler 4**

Associated Items: CE 003 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 004 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 3 and 4

SV 001

What to do	Why to do it
Total Particulate Matter: less than or equal to (0.025x + 0.027y)/(x+y) lb/mmBtu based on a 24-hour average, where: x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu	Title I Condition: Limit to restrict potential emission increases to less than significant as defined by 40 CFR Section 51.165 and 40 CFR Section 52.24. Also ensures compliance with 40 CFR Section 60.43b. Minn. R. 7007.4000 - 7007.4030
Opacity: less than or equal to 20 percent opacity using 6 Minute Average except for one 6-minute period per hour of not greater than 27% opacity.	40 CFR Section 60.43b(f) Minn. R. 7011.0565
Nitrogen Oxides: less than or equal to (0.6x + 0.4y +0.1z)/(x+y+z) lb/mmBtu based on a 30 day rolling average, where: x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu z = heat input from natural gas in mmBtu Once each hour, the Permittee shall use the NOx emission limit equation to calculate the effective NOx emission limit.	Title I Condition: 40 CFR Section 52.21 BACT Limit; 40 CFR pt. 50. Also ensures compliance with 40 CFR Section 60.44b. Minn. R. 7007.3000
Carbon Monoxide: less than or equal to (0.35x + 0.45y + 0.04z)/(x+y+z) lb/mmBtu based on a one-hour average, where: x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu z = heat input from natural gas in mmbtu	Title I Condition: 40 CFR Section 52.21 BACT Limit; 40 CFR pt. 50 Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to (2.03Sx + 0.17y)/(x+y) lb/mmBtu based on a one hour averaging period, where: S = the allowed sulfur content in coal in percent by weight determined by fuel sampling and analysis (see the following requirement for more detail). x = heat derived from the burning of coal over any hour in mmBtu y = heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu Once each hour, the Permittee shall use the SO2 emission limit equation to calculate the effective SO2 emission limit.	Title I Condition: 40 CFR Section 52.21 BACT Limit; 40 CFR pt. 50. Also ensures compliance with 40 CFR Section 60.43(a) Minn. R. 7007.3000
Limit of coal sulfur content (by weight): - 0.58% when burned alone or with natural gas or sludge, - may not exceed 0.9% at any time - When coal is being burned in combination with wood, the sulfur content limit shall vary as follows: S = 8.13 X rE S = allowable percent sulfur by weight r = coal feed rate in tons per hour. E = the exponent (-0.88) of "r" For use of this equation, r must be greater than or equal to 12. When r is less than 12, S = 0.9%.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
The Permittee shall only burn wood (including creosoted railroad ties), coal, natural gas, sludge from Stora Enso North America clarifier, oily cellulose-based sorbents (including oily rags), oily coal and oily wood (coal or wood with oil spilled on it), boiler cleaning agents, activated charcoal, hardboard rejects, and cellulose fill from mattress recycling in EU004. Other materials may be combusted in this emission unit for a short period of time during a trial burn as approved by an amendment to this permit.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Boiler cleaning agents burn requirements: agents must be EDTA type or Ammonium Bromate, agents generated on-site, maximum of 5% of total fuel mass input, oxygen must be 3% or greater, and agents may be burned only while the boiler is operating at 75 percent of rated capacity or greater. During the initial burn (after issuance of this permit) in EU 004 of boiler cleaning agents, the Permittee shall monitor CO and opacity emissions to deterimine the compliance status of CO and opacity emissions during the burn. Monitoring results for the initial burn shall be submitted to the Agency. If compliance with the EU 004 CO and opacity limitations is shown, CO monitoring is not required during subsequent boiler cleaning agent combustion events.	Minn. R. 7007.0800, subp. 2
Fuel usage rate limits: - 22 tons per hour for coal; - 67 tons per hour for wood; - 0.305 MMCF per hour for natural gas.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Fuel Sampling: The Permittee shall sample solid fuel as follows: 1) Daily composite sampling for wood fuel; and 2) sample one coal delivery each week according to the Permittee's sampling plans approved by the MPCA on November 18, 1987 (except the need for a duplicate gross 240 pound sample is not required).	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Fuel Analysis: The Permittee shall analyze solid fuel samples using ASTM methods or equivalent methods approved by the Commissioner. Samples shall be analyzed for the following parameters: Coal: Sulfur content in wt. %, heating value in Btus per lb. Wood: Heating value in Btus per lb. The average heating value for natural gas may be obtained from the vendor. The Permittee shall maintain the records of all analyses for a period of 5 years from the date of recording.	Minn. R. 7007.0800, subp. 2 and subp. 4
Maximum allowable heat input (based on 8-hour block averages): - 590 mmBtu/hour at any time - 380 mmBtu/hr from coal - 590 mmBtu/hr from wood - When wood fuel = 100% chipped railroad ties: maximum total heat input from all fuels = 326 mmBtu/hr, chipped railroad tie heat input shall not exceed 86% of total heat input, and coal heat input shall not be less than 14% of total heat input. - 305 mmBtu/hr from natural gas	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Total heat input shall be determined using the following equations: Total heat input to EU003 = x + y + z (not to exceed 590 mmBtu/hr) x = 380 - [(22-r) X (17.2)] y = 590 - [(67-s) X (8.8)] z = 305 - [(0.305-t) X (1000)] x= heat derived from the burning of coal over any hour in mmBtu y= heat derived from the burning of wood and wood waste portion of sludge and railroad ties over any hour in mmBtu z= heat derived from the burning of natural gas over any hour in mmBtu r = coal feed rate to boiler in tons per hour s = wood feed rate to boiler in tons per hour t = natural gas feed rate to boiler in million cubic feet per hour	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Monitoring and Recordkeeping for fuel usage and heat input: The Permittee shall record the usage rate of each solid fuel on a daily basis, and calculate and record the hourly average fuel use for each solid fuel by dividing the daily fuel use by the number of hours of operation for that day. The Permittee shall measure the natural gas usage rate, in million cubic feet per hour, using a fuel meter. The Permittee shall calculate and record the heat input during any hour from each fuel, as well as the total heat input for that hour. Heat content value of solid fuel shall be obtained from fuel sampling as required in this permit. Heat content value of natural gas shall be obtained from the natural gas vendor. The Permittee shall maintain all fuel usage and heat input records for five years from the date of recording.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000
Record type and usage rate of each fuel on a daily basis, and calculate the hourly average fuel use for each fuel type by dividing the daily fuel use by the number of hours of operation for that day. Records shall be maintained for a minimum of 5 years.	Title I Conditions: PSD permit application and impacts analysis Minn. R. 7007.3000

Performance Test: due before end of each 60 months starting 04/01/2002 to determine compliance with the Title I particulate matter emission limit while burning coal, wood chips (including railroad ties), sludge, or any combination thereof. Tests shall be conducted at intervals not to exceed 60 months between tests. Particulate emissions testing shall be conducted in accordance with the procedures in 40 CFR Section 60.46b(d) and Minn. R. 7017.2001 - 7017.2060 so that test results can also be used to determine compliance with 40 CFR Section 60.43b.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months following Initial Performance Test to determine compliance with Title I CO emission limit while burning coal, wood chips (including railroad ties), sludge, or any combination thereof. Tests shall be conducted at intervals not to exceed 60 months between tests.	Minn. R. 7017.2020, subp. 1
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - CD or Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Boiler Alternative Operating Conditions for Performance Testing: Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 2(A) and 3(B)
Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing: If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following: (1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate. (2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate. In no case will the new operating rate limit be higher than allowed by an existing permit condition.	Minn. R. 7017.2025, subp. 3(B)
STET (Short Term Emergency and Testing) Operating hours limit: The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.	Minn. R. 7007.0800, subp. 2
STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing: If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test. If performance test results demonstrate compliance at greater than 80% any applicable emision limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test. In no case will STET operation be higher than allowed by an existing permit condition.	Minn. R. 7007.0800, subp. 2

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The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4
CONTINUOUS EMISSION MONITOR REQUIREMENTS	hdr
The owner or operator of an affected facility (EU004) shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring and recording sulfur dioxide emissions.	40 CFR Section 60.45(a)
The owner or operator of an affected facility (EU004) shall install, calibrate, maintain, and operate a continuous monitoring system for measuring and recording nitrogen oxides emissions.	40 CFR Section 60.48b(b) Minn. R. 7011.0565
The owner or operator of an affected facility (EU004) shall install, calibrate, maintain and operate a continuous monitoring system for measuring and recording opacity emissions.	40 CFR Section 60.48b(a) Minn. R. 7011.0565
The Permittee shall use the data from the NOx CEM on SV001 to determine the 30-day rolling average NOx emission rate.	40 CFR Section 60.46b(e)(2) Minn. R. 7011.0565
The owner or operator shall measure opacity, and all SO2, NOx, and CO2 emissions for each affect unit in accordance with 40 CFR Section 75.10	40 CFR Section 75.10; Minn. R. 7017.1020

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **CE 002 Electrostatic Precipitator - High Efficiency**

Associated Items: EU 003 Boiler 3

What to do	Why to do it
Total Particulate Matter: greater than or equal to 99 percent control efficiency	Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain CE002 at all times that any emission unit controlled by CE002 is in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subp. 2 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - excessive visible emissions are observed; - any recorded operating parameter is outside the required operating range; or - CE002 or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range, eliminate excessive visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for CE002. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Periodic Inspections: At least once per calendar year, or as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for Total Secondary Power. The owner or operator shall measure the indicators with a Distributed Control System. Parameter range indicating normal operation is: Total Secondary power greater than or equal to 25 kw as a 3-hour average Secondary Power for a field is calculated from measurement of seconday voltage and current. Total Seconday Power is the sum of the power for all fields. Voltage and current are measured digitally on a continuous basis and used to calculate power every 15 minutes. Hourly average power is calculated using 4 consecutive 15-minute calculated values. An excursion from the specfied minimum of 25 kw is based on a three-hour rolling average.	40 CFR Section 64.3(b) or (d) Minn. R. 7017.0200
The owner or operator shall conduct the monitoring required under 40 CFR pt. 64 upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintainig necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall conduct all monitoring in continuous operation at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit and/or air pollution control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitiation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under 64.7 and 64.8 when the exceedance or excursion are greater than the limit and averaging period. The owner/operator shall submit this report with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

Facility Name: Minnesota Power Inc - ML Hibbard

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Subject Item: **CE 004 Electrostatic Precipitator - High Efficiency**

Associated Items: EU 004 Boiler 4

What to do	Why to do it
Total Particulate Matter: greater than or equal to 99 percent control efficiency	Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain CE002 at all times that any emission unit controlled by CE002 is in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subp. 2 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - excessive visible emissions are observed; - any recorded operating parameter is outside the required operating range; or - CE004 or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range, eliminate excessive visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for CE004. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Periodic Inspections: At least once per calendar year, or as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
COMPLIANCE ASSURANCE MONITORING	hdr
The owner or operator shall comply with the approved monitoring for Total Secondary Power. The owner or operator shall measure the indicators with a Distributed Control System. Parameter range indicating normal operation is: Total Secondary power greater than or equal to 25 kw as a 3-hour average Secondary Power for a field is calculated from measurement of seconday voltage and current. Total Seconday Power is the sum of the power for all fields. Voltage and current are measured digitally on a continuous basis and used to calculate power every 15 minutes. Hourly average power is calculated using 4 consecutive 15-minute calculated values. An excursion from the specfied minimum of 25 kw is based on a three-hour rolling average.	40 CFR Section 64.3(b) or (d) Minn. R. 7017.0200
The owner or operator shall conduct the monitoring required under 40 CFR pt. 64 upon permit issuance.	40 CFR Section 64.7(a) Minn. R. 7017.0200
The owner or operator shall maintain the monitoring instruments and recorders, including but not limited to maintainig necessary parts for routine repairs of the monitoring equipment.	40 CFR Section 64.7(b) Minn. R. 7017.0200
Continuous Operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the owner or operator shall conduct all monitoring in continuous operation at all times the pollutant-specific emissions unit is operating.	40 CFR Section 64.7(c) Minn. R. 7017.0200
Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit and/or air pollution control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.	40 CFR Section 64.7(d)(1) Minn. R. 7017.0200
Documentation of need for improved monitoring: After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitiation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes.	40 CFR Section 64.7(e) Minn. R. 7017.0200
The owner or operator shall maintain records of monitoring data monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained. The owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.	40 CFR Section 64.9(b) Minn. R. 7017.0200
The owner or operator shall report exceedances or excursions under 64.7 and 64.8 when the exceedance or excursion are greater than the limit and averaging period. The owner/oprator shall submit this report with the Semiannual Deviations Report.	40 CFR Section 64.9(a)(2)(i) Minn. R. 7017.0200

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **MR 101 SO2 monitor - low range**

Associated Items: GP 001 Boilers 3 and 4

What to do	Why to do it
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; Minn. R. 7017.1020
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; Minn. R. 7017.1020
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
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)
Linearity Test Results Summary: due 30 days after end of each calendar quarter following Linearity and Leak Check Test if performed.	Minn. R. 7017.1180, subp. 4
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calender quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; and 40 CFR Section 75.50
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	40 CFR section 60.13(e), subp. 6; Minn. R. 7017.1090, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **MR 102 NOx monitor**

Associated Items: GP 001 Boilers 3 and 4

What to do	Why to do it
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; Minn. R. 7017.1020
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; Minn. R. 7017.1020
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
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)
Linearity Test Results Summary: due 30 days after end of each calendar quarter following Linearity and Leak Check Test if performed.	Minn. R. 7017.1180, subp. 4
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calender quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; and 40 CFR Section 75.50
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	40 CFR section 60.13(e), subp. 6; Minn. R. 7017.1090, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **MR 103 CO2 monitor**

Associated Items: GP 001 Boilers 3 and 4

What to do	Why to do it
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; Minn. R. 7017.1020
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; Minn. R. 7017.1020
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
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)
Linearity Test Results Summary: due 30 days after end of each calendar quarter following Linearity and Leak Check Test if performed.	Minn. R. 7017.1180, subp. 4
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calender quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; and 40 CFR Section 75.50
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	40 CFR section 60.13(e), subp. 6; Minn. R. 7017.1090, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **MR 104 SO2 monitor - high range**

Associated Items: GP 001 Boilers 3 and 4

What to do	Why to do it
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; Minn. R. 7017.1020
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; Minn. R. 7017.1020
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
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)
Linearity Test Results Summary: due 30 days after end of each calendar quarter following Linearity and Leak Check Test if performed.	Minn. R. 7017.1180, subp. 4
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calender quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; and 40 CFR Section 75.50
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	40 CFR section 60.13(e), subp. 6; Minn. R. 7017.1090, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **MR 107 flow monitor**

Associated Items: GP 001 Boilers 3 and 4

What to do	Why to do it
QA/QC The owner or operator of an affected facility shall operate, calibrate, and maintain each continuous monitor according to the QA/QC procedures in 40 CFR pt. 75, Appendix B as amended.	40 CFR Section 75.21; Minn. R. 7017.1020
Daily Calibration Error (CE) Test: conduct daily CE testing on all continuous monitors required by the Acid Rain Program, in accordance with 40 CFR pt. 75 App B.	40 CFR pt. 75 App B, section 2.1; Minn. R. 7017.1020
Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following Certification Test, i.e., once every two successive QA operating quarters (calendar quarter in which there are at least 168 unit operating hours). Conduct a RATA required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. Relative accuracy test audits may be performed annually (i.e., once every four successive QA operating quarters, rather than once every two successive QA operating quarters) if any of the conditions listed in 40 CFR pt. 75, Appendix B, Section 2.3.1.2(a) through Section 2.3.1.2(i) are met.	40 CFR pt. 75, Appendix B, section 2.3.1; Minn. R. 7017.1020
Linearity and Leak Check Test (Acid Rain Program): due before end of each QA operating quarter (as defined in Section 72.) in accordance with procedures in 40 CFR pt. 75, Appendix B, Sections 2.2.1 and 2.2.2, and Appendix A, Section 6.2. Perform a leak check at least once during each QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) and no less than 30 days apart.	40 CFR pt. 75, Appendix B, section 2.2.1 & section 2.2.2; Minn. R. 7017.1020
Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
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)
Linearity Test Results Summary: due 30 days after end of each calendar quarter following Linearity and Leak Check Test if performed.	Minn. R. 7017.1180, subp. 4
Relative Accuracy Test Audit (RATA) Notification: due 30 days before continuous monitor Relative Accuracy Test Audit (RATA)).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calender quarter in which the RATA was conducted.	Minn. R. 7017.1180, subp. 3
Recordkeeping: The owner or operator must retain records of all monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; and 40 CFR Section 75.50
Continuous Operation: Continuous monitors must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A monitor must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	40 CFR section 60.13(e), subp. 6; Minn. R. 7017.1090, subp. 1

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

Subject Item: **MR 108 opacity monitor**

Associated Items: GP 001 Boilers 3 and 4

What to do	Why to do it
All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data for each successive 6-minute period.	Minn. R. 7017.1200, subp. 1, 2 & 3; 40 CFR Section 60.13(e)(1); 40 CFR Section 60.13(h)
Continuous Operation: COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	Minn. R. 7017.1090, subp. 1; 40 CFR Section 60.13(e)
COMS Daily Calibration Drift Check: The Permittee must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. The acceptable range is as defined in 40 CFR pt. 60, Appendix B, PS-1. For COMS without automatic zero adjustments, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments. For COMS with automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition as specified in 40 CFR 60.13(d)(2).	Minn. R. 7017.1210, subp. 2; 40 CFR Section 60.13(d)(l) regarding COMS and 60.13(d)(2)
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test or Permit Issuance. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3
COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar quarter in which the COMS calibration error audit was completed.	Minn. R. 7017.1220
Notification that Continuous Opacity Monitoring System (COMS) data will be used to determine compliance with opacity standard during performance test: due 30 days prior to the date of performance test.	40 CFR Section 60.7(a)(7)
Permittee is allowed to measure the combined effluent from two or more affected facilities subject to the same emission standard.	40 CFR Section 60.13(g)

TABLE B: SUBMITTALS

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

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

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA) .	MR101, MR102, MR103, MR104, MR107
Testing Frequency Plan	due 60 days after Initial Performance Test for particulate matter, nitrogen oxide, opacity and carbon monoxide emission limits required by PSD modeling. The plan shall specify a testing frequency using the test data based on MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1.	EU001, EU002

TABLE B: RECURRENT SUBMITTALS

Facility Name: Minnesota Power Inc - ML Hibbard

Permit Number: 13700015 - 003

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 07/14/1997 (Submit Deviations Reporting Form DRF-1). 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.	MR101, MR102, MR103, MR104
Linearity Test Results Summary	due 30 days after end of each calendar quarter following Linearity and Leak Check Test (Acid Rain Program) if performed.	MR101, MR102, MR103, MR104, MR107
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	MR101
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	MR102
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	MR103
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	MR104
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) .	MR107
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 03/14/2002 . A mid-year report, covering deviations which occurred during the period from January 1 through June 30, is due by July 30 of each year. An end-of-year report, covering deviations which occurred during the period from July 1 through December 31, is due by January 30 of each year. The report must be submitted even if there were no deviations for the reporting period. To be submitted on a form approved by the Commissioner.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 03/14/2002 (for the previous calendar year). To be submitted on a form approved by the Commissioner.	Total Facility

APPENDIX MATERIAL
Facility Name:Minnesota Power Inc - ML Hibbard
Permit Number: 13700015-003

Appendix I – Insignificant Activities

Apendix II – Phase II Permit Application (federal Acid Rain regulations)

Appendix I – Insignificant Activities

Coal unloading

Coal bunker to coal transfer

Fuel oil storage tank

Analysis laboratory

Welding

Parts washer

Natural gas vents

Propane space heating

Ash handling

These activities must be listed more specifically in the permit application (and the permit), if any of the following are true:

1) *the emissions units are subject to additional requirements under Section 114(a)(3) of the Clean Air Act (CAM);*
2) *the emissions units are subject to Hazardous Air Pollutant requirements under Section 112 of the Clean Air Ac (part 63 NESHAPs);*
3) *the emissions units are part of a Title I modification (NSR, pt 61 or 63 NESHAP mods, or NSPS mod);*
4) *if accounted for, the emissions units make the stationary source subject to a part 70 permit; or*
5) *the unit is required to do periodic monitoring.*

If none of the above are true, the activity can be listed in a general way in the permit with its applicable requirements (per White Paper Number 2). Make sure the TSD addresses why no periodic monitoring is necessary per September 1998 guidance on periodic monitoring.

The following table lists likely applicable requirements for subpart 3 insignificant activities (IAs). It is assumed that subpart 2 IAs are consistent with EPA's "trivial" activity list and "may be presumptively omitted from part 70 applications" per White Paper Number 1. Subpart 4 IAs would need to be included in the permit as well, but can not easily be addressed generically. So, they are not listed below.

Insignificant Activities and Applicable Requirements

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp.2. In addition, this permit specifically prohibits the Permittee from making any modifications that would make the source major under NSR. The following table is a listing of the insignificant activities that the Permittee is somewhat likely to add and their associated applicable requirements.

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane.	Minn. R. 7011.0510/0515
3(B)	Furnaces, boilers, and incinerators:	
	nfrared electric ovens; and	Minn. R. 7011.0105/0110
	uel burning equipment with a capacity less than 500,000 Btu/hour but only if the total combined capacity of all fuel burning equipment at the stationary source with a capacity less than 500,000 Btu per hour is less than or equal to 2,000,000 Btu/hour.	Minn. R. 7011.0510/0515 *OR* Minn. R. 7011.0610 + Minn. R. 7011.1215, subp. 3 *(if pathwaste combustor)*
3(C)	abrication operations: equipment used exclusively for forging, pressing, drawing, spinning, or extruding hot metals.	Minn. R. 7011.0710/0715
3(D)	Processing operations:	
	open tumblers with a batch capacity of 1,000 pounds or less; and	Minn. R. 7011.0710/0715
3(E)	Storage tanks:	

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
	1. gasoline storage tanks with a combined total tankage capacity of not more than 10,000 gallons; and	Minn. R. 7011.0710/0715 *OR* Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3(B) *OR* Minn. R. 7011.0105/0110 *(if not associated with industrial process per the IPE definition)*
	2. non-hazardous air pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of non-hazardous air pollutant VOCs and with a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit.	Minn. R. 7011.0710/0715 *OR* Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3 (B) OR Minn. R. 7011.0105/0110 *(if not associated with industrial process per the IPE definition)*
3(F)	Cleaning operations: commercial laundries, not including dry cleaners and industrial launderers.	Minn. R. 7011.0105/0110
3(G)	Emissions from a laboratory, as defined in the subpart.	Minn. R. 7011.0510/0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
3(H)	Miscellaneous:	
	1. equipment used exclusively for packaging lubricants or greases;	Minn. R. 7011.0710/0715 OR Minn. R. 7011.0105/0110
	2. equipment used for hydraulic or hydrostatic testing;	Minn. R. 7011.0710/0715
	3. brazing, soldering or welding equipment;	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
	4. blueprint copiers and photographic processes;	Minn. R. 7011.0105/0110
	5. equipment used exclusively for melting or application of wax;	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
	6. nonasbestos equipment used exclusively for bonding lining to brake shoes; and	Minn. R. 7011.0710/0715
	7. cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners.	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than: 1. 4,000 lbs/year of carbon monoxide; and 2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns,	*Case-by-case determination*

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
	volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone.	
3(J)	Fugitive Emissions from roads and parking lots.	Minn. R. 7011.0150
3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment.	Minn. R. 7011.0710/0715

Insignificant Activities Required to Be Listed for Part 70 sources

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
4	Individual emissions units at a stationary source, each of which has: A. Potential emissions of 5.7 pounds per hour or actual emissions of two tons per year of carbon monoxide; B. Potential emissions of 2.28 pounds per hour or actual emissions of one ton per year for particulate matter, particulate matter less than ten microns, nitrogen oxide, sulfur dioxide, and VOCs; and C. For hazardous air pollutants, emissions units with: (1) potential emissions of 25 percent or less of the hazardous air pollutant thresholds listed in subp. 5; or (2) combined HAP actual emissions of one ton per year unless the emissions unit emits one or more of the HAPs listed in this subpart.	

Conditionally Insignificant Activities

	Rule Description of the Activity	Applicable Requirement
Minn. R. 7008.4100	Total VOC Usage at the stationary source less than 200 gallons or 2000 pounds in each calendar year. See Minn. R. 7008.4100 for recordkeeping and calculation requirements for this activity.	Minn. R. 7011.0710/0715
Minn. R. 7008.4110	Emissions from equipment venting particulate matter (PM) or particulate matter less than 10 microns (PM-10) inside a building, provided that emissions from the equipment are: a). filtered through an air cleaning system; and b). vented inside of the building 100% of the time.	Minn. R. 7011.0710/0715

Appendix II – Phase II Acid Rain Permit Application

Acrobat Document

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 13700015-003
REISSUANCE OF A PART 70 AIR EMISSION PERMIT

This Technical Support Document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 4911 / 4961)
Allete / Minnesota Power Inc. & the City of Duluth	4913 Main Street Duluth St. Louis County
Contact: Brandon Krogh Phone: (218) 723-3954	

1.2. Description of the Permit Action

The Duluth Steam District No. 2/Hibbard Energy Center (DSD#2/HEC) steam and power generating facility is jointly owned by Minnesota Power (MP) and the City of Duluth. Boilers 3 & 4 and their associated equipment are owned by the City of Duluth, whereas MP owns the remaining portion of the facility. Located in the city of Duluth adjacent to the Stora Enso North America (SENA) paper mill, the facility combusts a mixture of wood wastes, coal, natural gas and paper mill sludge. The primary mission of the facility is to produce steam for SENA and its associated paper recycling facility. The facility (HEC portion) is also capable of producing electrical energy for the MP system. The site contains four steam generating boilers, four steam turbines, coal handling facilities, wood handling facilities, a 3.4 million gallon fuel oil storage tank and natural gas supply lines. The two oldest boilers and their associated turbine-generators (Boilers No. 1 and No. 2), and the fuel oil supply tank have been out of service since 1981, but can be used if future plans were to change.

All operations and equipment within the facility boundary are established to: (1) provide steam and/or electrical power for on-site and off-site utilization; (2) provide fuel for steam and/or electrical power production or support activities; (3) monitor and control air emissions generated from electrical power production; (4) handle waste heat, wastes and materials produced from the on-site operations; and (5) provide support activities. The description of these operations and equipment are described below.

Steam and power generation is accomplished primarily through steam generation in two boilers (Boilers No. 3 and No. 4). Both units have spreader stokers and traveling grates. Emissions are discharged through a common 331 foot stack (Stack No. 1). Boilers No. 1 and No. 2 are smaller units and if used would also discharge air emissions through Stack No. 1.

Boilers No. 3 and No. 4 are capable of combusting a mixture of wood, sub-bituminous coal, natural gas and sludge. The primary fuel is wood which may include wood chips, sawdust, sanderdust, wood bark, chipped railroad ties and other various forms of waste wood from regional suppliers. The wood fuel is supplemented with low-sulfur, sub-bituminous coal and natural gas. Boilers No. 3 and No. 4 are capable of combusting wood, coal, and various combinations of wood, coal, and natural gas. This permit allows for the addition of oily coal (coal with oil spilled on it), oily cellulose-based sorbents (including rags), activated charcoal, boiler cleaning agents, and cellulose fill from mattress recycling as permitted fuels.

The wood fuel is delivered directly to the plant in covered trucks, unloaded and conveyed directly to the A-frame storage building. The wood fuel is conveyed to the wood metering bins and transferred to the boiler's traveling grate through the auger feed and spreader stoker systems. Combustion occurs in suspension and on the grate. In the fuel types allowed under EU003 and EU004, "wood" means clean wood with no adhesives, paint, stain, preservative, etc., and that any clean wood can be burned under that permit condition (creosoted railroad ties are also specifically allowed). Wood from demolition debris which meets this condition can be burned. Clean natural wood, such as bark and trees which have been chopped or chipped to a suitable size are also included in the term "wood". Such material may include some dirt and sand.

Coal is delivered to the facility in trucks and unloaded in a three sided enclosure maintained at negative pressure and vented through a fabric filter. Coal is transferred from the unloading facility to storage bunkers by a bucket conveyor system. Air from the bunkers and coal transfer system is vented through a fabric filter. Coal transfer from the bunker to the boilers is accomplished by a totally enclosed conveyor.

Natural gas is supplied to Boilers No. 3 and No. 4 through a pipeline. Natural gas could be supplied to Boilers No. 1 and No. 2 by the same system.

If used in the future as fuel, oil would be delivered by truck and stored in the 3.4 million gallon tank. Piping which would connect the fuel oil storage to the boilers is disconnected.

Air emissions from the facility are released primarily as a result of the combustion of wood and coal. Smaller amounts of criteria pollutants are emitted from the combustion of natural gas and the handling and storage of coal and wood fuels. The combustion of wood and coal also results in the emission of some hazardous air emissions.

Continuous Emission Monitors have been installed, tested and certified to measure and record the combustion emissions from Boilers No. 3 & No. 4 exiting via the common stack, Stack No. 1. The monitors measure and record information on the following parameters: Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x), opacity, Carbon Monoxide (CO), Carbon Dioxide (CO_2), and volumetric flow and are located in the breaching leading to the stack.

Particulate emissions from Stack No. 1 due to combustion in Boilers No. 3 and No. 4 are controlled by multiple cyclones in series with an electrostatic precipitator for each unit. Boilers No. 1 and No. 2 do not have associated pollution control equipment. Particulates from coal unloading, transfer, and storage are controlled with fabric filter baghouses. Additional particulate control is accomplished through the use of enclosures to limit fugitive emissions from coal and wood unloading operations.

The Hibbard portion of the facility is designed to operate with a once-through cooling system to dissipate waste heat in the production of electrical energy. Water from St. Louis Bay is pumped through the intake structure, used to condense steam from the back side of the turbine generator and discharged to the bay.

The combustion of wood and coal also produces ash, which is collected off the traveling grates, wetted and transferred to a truck. The ash is used as agricultural soil enhancement or is landfilled.

Support activities include the building elevator, vehicle maintenance, general facility activities, energy production equipment maintenance, piping installation and maintenance. These activities can include painting, welding, and cleaning operations. In terms of air emission regulations, these activities are considered insignificant activities for these purposes.

The previous Part 70 permit expired in 2002. Since the expiration, Minnesota Power has operated the plant under the conditions of the expired permit as is required by Minn. R. 7007.0450, providing for continuation of expired permits.

Most of the operating conditions of the permit will remain the same as in the existing operating permit and amendments. Compliance Assurance Monitoring (CAM, required by 40 CFR pt. 64) requirements have been added. The permit also meets the requirements of Minn. R. 7007.0800, that specifies requirements for the content of Part 70 permits. Permit conditions in previous permits requiring enclosed conveyors and paved roads have been satisfied and have been removed from this reissuance permit.

Performance Tests

A performance test report was submitted May 8, 2002 and a notice of certification of a CO_2 Continuous Emissions Monitoring (CEM) on August 20, 2003. The performance test was conducted on EU003 and EU004 and demonstrated compliance with the PM and CO emission limits when burning coal and wood. Compliance with the NO_x and SO_2 limits is provided by CEMs. During the CO_2 certification test, performance of NO_x and SO_2 CEMs was verified.

Test data from 8-20-2003 CEM certification test is summarized below.

NO_x CEM	99 – 117 ppm or 0.290 – 0.334 lb/MMBtu Limit 0.6 lb/MMBtu with coal, 0.4 lb/MMBtu with natural gas
SO_2 CEM	28.5 – 55.9 ppm or 0.113 – 0.221 lb/MMBtu Limit typically 1.8 lb/MMBtu with coal and 0.17 lb/MMBtu with wood
Flowrate	8.3 – 8.8 MMscfh
Moisture	6 – 11 %
CO	88 – 109 ppm

1.3 Description of any Changes Allowed with this Permit Issuance and Clarifications

Cellulose fill from mattress recycling is added as an allowed fuel.

Use of wood as fuel:

Wood is allowed as a fuel for EU003 and EU004. In the relevant permit conditions, “wood” means clean wood with no adhesives, paint, stain, preservative, etc. and that any clean wood can be burned under that permit condition (creosoted railroad ties are also specifically allowed). Wood from demolition debris which meets this condition can be burned. Clean natural wood, such as bark and trees which have been chopped or chipped to a suitable size are also included in the term "wood". Such material may include some dirt and sand.

GP001 also allows use of certain waste wood products as follows:

"Waste wood fuel Limit: The Permittee may burn up to 28,500 tons of woodwaste consisting of rejects and/or trimmings consisting primarily of wood with some glues and/or adhesives and backings. After 28,500 tons are burned, if the Permittee wishes to continue burning woodwaste as defined herein, the Permittee shall determine what permit amendment (if any) is necessary to continue as outlined below."

1.4 Description of Permit History

Permit Number and Issuance Date	Action Authorized
13700015-001 July 14, 1997	Total Facility Operating Permit, Part 70
13700015-002 March 14, 2002	Major Amendment; material handling test on hardboard rejects and change in coal sampling frequency

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

	PM tpy	PM_{10} tpy	SO_2 tpy	NO_x tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
EU001	23.08	23.08	553.98	1131.05	92.33	3.37		
EU002	21.46	21.46	515.09	1051.64	85.85	3.13		
EU003	69.77	69.77	3197.23	1366.56	1162.89	*43.93*		
EU004	69.77	69.77	3197.23	1366.56	1162.89	*43.93*		
FS	78.8	43.4						

For EU003 and EU004, note that the permit contains limits on emissions in lb/MMBtu for each fuel, and also contains limits on the maximum tons per hour of coal and wood and on the maximum heat input for coal and wood. Wood alone is worst case for PM, PM_{10}, and CO. Maximum coal plus wood is worst case for SO_2 and NO_x,

	PM tpy	PM_{10} tpy	SO_2 tpy	NO_x tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	262.9	227.5	7463.5	4915.8	2504.0	94.4	117	170
Total Facility Actual Emissions (2004)	78.5	39.8	315.4	626.3	343.7	21.7	HAPs not reported in emission inventory	

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	X		
Part 70 Permit Program	X		
Part 63 NESHAP	X		

2. Regulatory and/or Statutory Basis

Federal Acid Rain Regulations

Boilers 3 and 4 are subject to Phase II of the Acid Rain regulations and have submitted the federal Phase II application. This is attached to the permit as Appendix II. Each boiler must hold allowances for SO_2 emissions.

There is no acid rain NO_x limit for either of these boilers because the boilers are of the stoker-type and inherently have lower NO_x emissions (typically 0.5 lb/MM Btu) than the limits specified in the acid rain regulations for other types of boilers (0.68 to 0.86 lb/MM Btu).

Federal Clean Air Interstate Rule (CAIR)

This federal regulation was promulgated by EPA in 2005 and will apply to this facility. The facility must submit an application on forms being developed by EPA by July of 2007. After receipt of the application, the MPCA may reopen the permit to add the requirements of CAIR.

New Source Review

The facility is an existing major source under New Source Review regulations. No changes are authorized by this permit.

The Hibbard Plant is in an attainment area for all pollutants, and so the applicable New Source Review (NSR) regulations are found under 40 CFR § 52.21 (Prevention of Significant Deterioration (PSD)). The facility is classified as a major source as defined in that rule. Two of the facility's boilers (Boilers 3 and 4) were modified during the 1980's and the modification was subject to PSD review for SO_2, NO_x, and CO. The modification was kept minor for Particulate Matter (PM) through emission limits set on all boilers, and for limits on coal handling at the facility. At the time of the modification, the plant's area was classified as non-attainment for PM, and so the limits were set to avoid non-attainment area review.

Part 70 Permit Program

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

New Source Performance Standards (NSPS)

Power Boilers 1 and 2 were constructed prior to the effective date of New Source Performance Standards (NSPS). The modification of Boilers 3 and 4 subjected them to the requirements of 40 CFR pt. 60, subp. Db. However, note that 40 CFR § 60.40b(b)(2) specifies that Boilers 3 and 4 are subject to the PM and NO_x standards under 40 CFR pt. 60, subp. Db, and to the SO_2 standards under 40 CFR pt. 60, subp. D.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Although Boilers 3 and 4 are considered industrial boilers under NSPS, based on NESHAP definitions provided in 40 CFR Part 63 Subpart DDDDD they are considered electric utility steam generating units and therefore are not required to comply with NESHAPs for industrial boilers. They will however be affected boilers under the federal Clean Air Mercury Rule (CAMR).

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.1105 Standards of Performance for Coal Handling
- Minn. R. 7011.0710 Standards of Performance for Pre-1969 Industrial Process Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

Compliance Assurance Monitoring

This permit action is a reissuance of a Part 70 permit. Therefore CAM applies to any emission units with air pollution control equipment which meet the CAM applicability requirements. CAM applies to emission units 003 and 004, coal fired boilers with Electrostatic Precipitator (ESP) for PM control.

Performance Criteria required by 40 CFR pt. 64 include:

- Representative data – data must be representative of emissions or the chosen parameter, considering, for instance, the location of the monitor.

  The indicator of good ESP performance is total Seconday Power. This is calculated from measurement of secondary voltage and current which are measured directly.

- Verification procedures – for new or modified monitors, verification of the operational status.

  Digital monitoring equipment is already in place and operational.

- Quality assurance and quality control practices (QA/QC)

  MPCA standard practice is to require an O and M plan for all air pollution control equipment, including a corrective action plan. Additional requirements of 40 CFR pt. 64 are included in the permit.

- Frequency of data collection

  Voltage and current are measured continuously and used to calculate a 15-minute average. Four consecutive 15-minute values are used to calculate a 1-hour average.

Table 3. Regulatory Overview of Facility

EU, GP, or SV	Applicable Regulations	Comments:
GP 001	Minn. R. 7007.0800, subp. 2 Limit on amount of hardboard rejects burned	Site-specific limit based on request to burn some hardboard plant waste materials
	Minn. R., 40 CFR pt. 60 and 40 CFR pt. 75	CEM and COM requirements common to boilers 3 and 4
EU 001	40 CFR § 52.21	Title I Conditions: limits for PM, SO_2, NO_x, and CO based on PSD
	40 CFR § 52.21	Title I Conditions: Allowed fuel types specified and fuel specifications based on PSD application
EU 002	40 CFR § 52.21	Title I Condition: limits for PM, SO_2, NO_x, and CO based on PSD
	40 CFR § 52.21	Title I Conditions: Allowed fuel types specified and fuel specifications based on PSD application
EU 003	40 CFR § 51 App. S, 40 CFR § 52.24, 40 CFR pt. 60, and Minn. R. 7007.4000	Title I Condition: PM limit to avoid classification as a major modification under federal NAA NSR in effect at the time a previous permit was issued. Area is since reclassified as attainment/unclassifiable.
	40 CFR § 52.21	Title I Conditions: BACT limits for SO_2, NO_x, and CO
	40 CFR § 52.21	Supporting fuel usage limits and heat input limits
EU 004	40 CFR § 51 App. S, 40 CFR § 52.24, 40 CFR pt. 60, and Minn. R. 7007.4000	Title I Condition: PM limit to avoid classification as a major modification under federal NAA NSR in effect at the time a previous permit was issued. Area is since reclassified as attainment/unclassifiable.
	40 CFR § 52.21	Title I Conditions: BACT limits for SO_2, NO_x, and CO
	40 CFR § 52.21	Supporting fuel usage limits and heat input limits

3. Technical Information

3.1 Calculations of Potential to Emit

Calculations of PTE for the boilers are attached to this TSD.

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

Table 4. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP001	Hardboard rejects ≤ 28500 tons for test burn		
EU001	PM: ≤ 0.01 lb/MMBtu 52.21(k) Opacity: ≤ 20 % with exceptions 7011.0510, subp. 2	Fuel oil sampling and analysis for ash content COM	Common stack for EU001, 002, 003, and 004 Fuel oil ash content limited so that the emission limit is met without control
	SO2: ≤ 0.24 lb/MMBtu 52.21(k)	Fuel oil sampling and analysis for sulfur content	Fuel oil sulfur content limited so that the emission limit is met without control
	NOx: ≤ 0.49 lb/MMBtu 52.21(k)	CEM	*Test data ?*
	CO: ≤ 0.04 lb/MMBtu 52.21(k)		*Test data ?*
EU002	PM: ≤ 0.01 lb/MMBtu 52.21(k) Opacity: ≤ 20 % with exceptions 7011.0510, subp. 2	Fuel oil sampling and analysis for ash content COM	Common stack for EU001, 002, 003, and 004 Fuel oil ash content limited so that the emission limit is met without control
	SO2: < 0.24 lb/MMBtu 52.21(k)	Fuel oil sampling and analysis for sulfur content	Fuel oil sulfur content limited so that the emission limit is met without control
	NOx: < 0.49 lb/MMBtu 52.21(k)	CEM	
	CO: < 0.04 lb/MMBtu 52.21(k)		
	NOx: ≤ 0.6 lb/MMBtu for coal - BACT NOx: ≤ 0.4 lb/MMBtu for wood - BACT NOx: ≤ 0.1 lb/MMBtu for	CEM	Common stack

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
	natural gas - BACT Proportional equation for multiple fuels		
	CO: ≤ 0.35 lb/MMBtu for coal - BACT CO: ≤ 0.45 lb/MMBtu for wood - BACT CO: ≤ 0.04 lb/MMBtu for natural gas - BACT Proportional equation for multiple fuels		Performance test verified compliance with CO limit
	SO2: ≤ 2.03S lb/MMBtu for coal - BACT SO2: ≤ 0.17 lb/MMBtu for wood - BACT Proportional equation for multiple fuels	CEM Coal sampling and analysis for sulfur content	Common stack
EU004	PM: ≤ 0.025 lb/MMBtu for coal PM: ≤ 0.027 lb/MMBtu for wood NAANSR Opacity: ≤ 20 % with exceptions NSPS Db	CAM; also daily wood sample; weekly coal sample; fuel analysis COM for opacity	Common stack for EU001, 002, 003, and 004 CAM applies to this unit and the ESP used for PM control; CAM requirements are for at least 25 kw secondary power and corrective actions
	NOx: ≤ 0.6 lb/MMBtu for coal - BACT NOx: ≤ 0.4 lb/MMBtu for wood -BACT NOx: ≤ 0.1 lb/MMBtu for natural gas - BACT Proportional equation for multiple fuels	CEM	Common stack

	CO: ≤ 0.35 lb/MMBtu for coal - BACT CO: ≤ 0.45 lb/MMBtu for wood - BACT CO: ≤ 0.04 lb/MMBtu for natural gas - BACT Proportional equation for multiple fuels		Performance test verified compliance with CO limit
	SO2: ≤ 2.03S lb/MMBtu for coal - BACT SO2: ≤ 0.17 lb/MMBtu for wood - BACT Proportional equation for multiple fuels	CEM Coal sampling and analysis for sulfur content	Common stack

3.3 Insignificant Activities

Minnesota Power - Hibbard has several operations which are classified as insignificant activities. These are listed in an Appendix to the permit.

3.4 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements.

3.5 Comments Received

Public Notice Period: June 10, 2006 – July 10, 2006
EPA 45-day Review Period: June 10, 2006 – July 25, 2006

Comments were not received from the public during the public notice period Comments were not received from EPA during their review period.

4. Conclusion

Based on the information provided by Minnesota Power, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13700015-003, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: David Beil (permit writer/engineer)

Robert Beresford (enforcement)
Jenny Reinertsen (peer reviewer)

Attachments: 1. PTE Calculations

Criteria Pollutants PTE

EU001, 527 MMBtu/hr, No. 2 fuel oil (natural gas for startup)

PM, based on permit limit of 0.01 lb/MMBtu for all fuels

0.01 lb/MMBtu x 527 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 23.08 tons/yr

PM_{10} = same as PM

SO_2, based on permit limit of 0.24 lb/MMBtu

0.24 lb/MMBtu x 527 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 553.98 tons/yr

NO_x, based on permit limit of 0.49 lb/MMBtu

0.49 lb/MMBtu x 527 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 1131.05 tons/yr

CO, based on permit limit of 0.04 lb/MMBtu

0.04 lb/MMBtu x 527 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 92.33 tons/yr

VOC, using AP-42 emission factors

0.00146 lb/MMBtu x 527 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 3.37 tons/yr

EU002, 490 MMBtu/hr, No. 2 fuel oil (natural gas for startup)

PM, based on permit limit of 0.01 lb/MMBtu for all fuels

0.01 lb/MMBtu x 490 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = tons/yr

PM_{10} = same as PM

SO_2, based on permit limit of 0.24 lb/MMBtu

0.24 lb/MMBtu x 490 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = tons/yr

NO_x, based on permit limit of 0.49 lb/MMBtu

0.49 lb/MMBtu x 490 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = tons/yr

CO, based on permit limit of 0.04 lb/MMBtu

0.04 lb/MMBtu x 490 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = tons/yr

VOC, using AP-42 emission factors

0.00146 lb/MMBtu x 490 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = tons/yr

EU003, 590 MMBtu/hr, wood for full load; coal up to 380 MMBtu/hr plus wood

PM, worst-case is wood alone, 0.027 lb/MMBtu permit limit

0.027 lb/MMBtu x 590 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 69.77 tons/yr

PM_{10} = same as PM

SO_2, worst case is maximum coal (380 MMBtu/hr) and balance of heat input from wood, using permit limits

Coal, 2.03x 0.9 lb/MMBtu x 380 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 3040.86 tons/yr

Wood, 0.17 lb/MMBtu x 210 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 156.37 tons/yr

NOx, worst case is maximum coal (380 MMBtu/hr) and balance of heat input from wood, using permit limits

Coal, 0.6 lb/MMBtu x 380 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 998.64 tons/yr

Wood, 0.4 lb/MMBtu x 210 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 367.92 tons/yr

CO, worst case is wood alone, permit limit of 0.45 lb/MMBtu

0.45 lb/MMBtu x 590 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 1162.89 tons/yr

VOC, worst case is wood alone, using AP-42 emission factors

0.017 lb/MMBtu x 590 MMBtu/hr x 8760 hr/yr x 1 ton/2000 lb = 43.93 tons/yr

EU004 – same as EU003

HAPs PTE

EU001 and EU002, No. 2 fuel oil only

EU003 and EU004, 590 MMBtu / hr

Calculation for HAP for which wood is worst case

In this case, since the boiler is allowed to operate at full load with wood, just use the wood factor.

Calculation for HAP for which coal is worst case

If there is also a factor for wood, calculate PTE using the permit limit of 380 MMBtu/hr for coal and balance (210) from wood.

If there is no factor for wood, estimate PTE using the coal factor and 590 MMBtu/hr.