

AIR EMISSION PERMIT NO. 13700027- 005

IS ISSUED TO

HIBBING PUBLIC UTILITIES COMMISSION

1832 6th Avenue East
Hibbing, St. Louis County, MN 55746-1660

And

LAURENTIAN ENERGY AUTHORITY LLC

618 2nd Street South
Virginia, MN 55792

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	Issuance Date	Action Number
Total Facility Oper. Permit - Reissuance	09/31/2004	06/30/2005	003
Administrative Amendment	1/30/2006	03/02/2006	004
Major Amendment	11/14/2006	See below	005

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/Major Source for NSR

Issue Date: June 5, 2007

Expiration: June 30, 2010
Title I Conditions do not expire.

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

for Brad Moore
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 Hibbing Public Utilities Commission (HPUC) operates a co-generation facility for the city of Hibbing. The facility generates electrical power for the city and steam for space heating of businesses, schools, and residences. The HPUC power plant is located in downtown Hibbing and was originally constructed in 1919. The emission units at the source consist of three coal/natural gas-fired boilers, an ash-handling system, as well as the two natural gas-fired boilers located a few blocks away at Hibbing High School that are connected to the HPUC steam distribution system. The five boilers are labeled Boiler No. 1A, Boiler No. 2A, Boiler No. 3A, High School Boiler No. 1, and High School Boiler No. 2.

Boilers 1A, 2A, and 3A are spreader stoker units that can burn subbituminous coal, and bituminous coal. Boilers 1A and 2A can also burn natural gas. Boilers 1A, 2A, and 3A are each equipped with their own electrostatic precipitator (for particulate matter control) and exhaust stack. This permit allows the facility to also burn used oil and oily paper-based sorbents (including oily rags) in Boilers No. 1A, 2A, and 3A. The stacks for Boilers 1A and 2A will be combined into a taller stack prior to the startup of a new wood fired boiler.

The high school boilers combust only natural gas. The High School boilers were constructed in 1972 and connected at that time to the HPUC steam heating system. The HPUC became the sole operator of these units in 1982. However, the change of operator was not considered a modification under New Source Review. Currently these natural gas-fired boilers are only operated a few days per year for emergency back-up. The majority of the steam heat for the school is supplied by the main HPUC boilers.

Boilers No. 1A and 2A are rated at 207 mmBtus (million Btu) per hour (139,000 lbs. of steam per hour). Boiler No. 3A is rated at 243 mmBtus per hour (165,000 lbs. of steam per hour).

Boilers 1A, 2A, and 3A, are individually equipped with Continuous Emission Monitors (CEMs), for opacity, sulfur dioxide, and oxygen. The High School Boilers do not have any CEMs.

There are three steam-driven electric generating turbines at the facility with a total production capacity of 38 Megawatts.

Other air emission sources at the facility include a railcar/truck coal unloading station and an ash transfer system. The coal unloading station is considered an insignificant activity but will be included in the facility's fugitive dust control plan.

The permit reissuance in 2005 of the Title V total facility operating permit authorized construction of an additional boiler and material handling equipment. Specifically, the permit authorized the installation of a wood fired boiler to be used for district heating and electric generation. Also authorized with this permit action was the installation of wood handling and storage equipment.

The wood fired boiler was part of a larger project that includes a wood fired boiler at Virginia Public Utilities. Hibbing Public Utilities and Virginia Public Utilities entered into a joint venture via formation of a third party, Laurentian Energy Authority (LEA), to generate electricity from biomass as required by an Xcel Energy purchase power agreement. LEA will lease the existing turbines to produce 15 MW at Virginia and 20 MW at Hibbing.

Action 004:

This permit corrected language regarding the opacity filter values to be used in the required COMS Calibration Error Audit. The permit inadvertently specified filter values of 11, 20 and 37 percent opacity. This is not consistent with the rule. The language has been changed from “Filter values used shall correspond to approximately 11 percent, 20 percent, and 37 percent opacity”, to “Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.”

Action 005:

A condition of the reissuance permit, permit No. 13700028-005, was that the Permittee was to submit pressure drop ranges for each baghouse in the form of a major amendment application. This permit incorporates those pressure drop ranges for the material handling baghouses.

Also, some changes were made in the database for the facility description. Some of the stack parameters and location were changed, and some of the newly permitted equipment has been more completely described because vendors have now been chosen. Because some of the stack parameters changed, the Permittee re-performed the computer dispersion modeling done previously for the issuance of the previous permit. That dispersion modeling shows no violation of ambient standards.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

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

Subject Item: Total Facility

What to do	Why to do it
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.	Minn. R. 7019.1000, subp. 3 and Table 9 to Subp. DDDDD of Part 63
At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	
In addition, the notification for the Wood Fired Boiler is due by letter within 7 days of the shutdown if the shutdown was not consistent with the startup, shutdown and malfunction plan, and any applicable emission limitation was exceeded.	
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.	Minn. R. 7019.1000, subp. 2 and Table 9 to Subp. DDDDD of Part 63
At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	
In addition, the notification for the Wood Fired Boiler is due by letter within 7 days of the breakdown if the breakdown was not consistent with the startup, shutdown and malfunction plan, and any applicable emission limitation was exceeded.	
Refer to the EU007 requirements table for additional reporting requirements when actions taken are not consistent with the procedures specified in the EU007 startup, shutdown, and malfunction plan, and EU007 exceeds an applicable emission limitation.	continued from above
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
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

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A or B.	Minn. R. ch. 7017
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7007.0800, subp. 6(A)
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7007.0800, subp. 6(A)
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
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)
Emissions Inventory Report: due 91 days after the end of each calendar year (April 1). 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. 7002.0005 through Minn. R. 7002.0095
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Noise: The Permittee shall comply with noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during operation of any emission units. This is a state requirement only and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010-7030.0080
Performance Test (or Fuel Analyses for those pollutants not tested for) Notifications and Submittals; Performance Test Notification (written): due 30 days before each Performance Test for the existing boilers, due 60 days prior to testing for the wood fired boiler. Performance Test Plan: due 30 days before each Performance Test for the existing boilers, due 60 days prior to testing for the wood fired boiler. Performance Test Pre-Test Meeting: due 7 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test. The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018. For the Wood Fired Boiler, the Performance Test Report or Fuel Analysis Report must include the information in 40 CFR Section 63.7545(e).	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2, 40 CFR Section 63.7(b)(1) and (2), 40 CFR Section 63.7545(e)

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Comply with Subp. DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, as applicable, by September 13, 2007 for the existing boilers, Boilers 1A, 2A, 3A and the high school boilers, as applicable.	40 CFR Subp. DDDDD
Also comply with the applicable requirements of 40 CFR Part 63, Subp. A.	
AMBIENT STANDARDS	hdr
The Permittee shall comply and 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 7009.0800.	40 CFR pt. 50; Minn. Stat. Sec. 116.07, subds. 4a and 9; Minn. R. 7007.0100, subps. 7A, 7L and 7M; Minn. R. 7007.0800, subps. 1, 2, and 4; Minn. R. 7009.0010-7009.0080.
Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the dispersion modeling are listed in the Appendix of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates. The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled. The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000, 40 CFR Part 50, and Minn. R. 7009
For changes that do not involve an increase in an emission rate and that do not require a permit amendment, this proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000, 40 CFR Part 50, and Minn. R. 7009
For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit.	
For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.	
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)	hdr
Emissions Monitoring: The owner or operator shall use CEMS to measure emissions from EU 001-003 and 007. Additional monitoring requirements are located under the associated MR subject item.	Minn. R. 7017.1006
Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test CEMS Certification Test Report: due 45 days after CEMS Certification Test CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2	Minn. R. 7017.1060, subp. 1-3; and Minn. R. 7017.1080, subp. 1-4
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090
Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. In order for an hour of data to be considered, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour.	Minn. R. 7017.1160, subp. 1 and 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Part 60, Appendix F, section 3. The plan shall include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list.	Minn. R. 7017.1170, subp. 2
Requirement: CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3<(A)><(B)> and 40 CFR Section 60.13(d)(1) for each pollutant concentration, each diluent monitor, and for each monitor range. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA).	Minn. R. 7017.1180, subp. 2
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS)	hdr
Emissions Monitoring: The owner or operator shall use COMS to measure emissions from EU 001-003 and 007. Additional monitoring requirements are located under the associated MR subject item.	Minn. R. 7017.1006
Installation Notification: due 60 days before installing the continuous opacity monitoring system. The notification shall include plans and drawings of the proposed system which show the configuration of the monitoring system including any monitor bypass routes.	Minn. R. 7017.1040, subp. 1
Opacity COMS: The Permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring systems (COMS).	Minn. R. 7017.1006
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. Data shall be reduced to 6-minute averages. Six-minute opacity averages shall be calculated from 30 or more data points equally spaced over each 6-minute period.	Minn. R. 7017.1200, subp. 1, 2 & 3; 40 CFR Section 60.13(e)(1); 40 CFR Section 60.13(h)
COMS Certification Test Plan: due 30 days before COMS Certification Test COMS Certification Test Pretest Meeting: due 7 days before COMS Certification Test COMS Certification Test Report: due 45 days after COMS Certification Test COMS Certification Test Report - Microfiche Copy: due 105 days after COMS Certification Test The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2	Minn. R. 7017.1060, subp. 1-3; and Minn. R. 7017.1080, subp. 1-4
Continuous Operation: 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.	Minn. R. 7017.1090
QA Plan: Develop and implement a written quality assurance plan that covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Part 60, Appendix F, section 3. The plan shall include the manufacturer's spare parts list for each COMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list.	Minn. R. 7017.1170, subp. 2
COMS Daily Calibration Drift Check: The Permittee must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. The acceptable range is as defined in 40 CFR pt. 60, Appendix B, PS-1. The span value shall be between 60% and 80%. 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)

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Attenuator Calibration: The Permittee shall have an independent testing company conduct calibrations of each of the neutral density filters used in the calibration error audit according to the procedure in Code of Federal Regulations, Title 40, Part 60, Appendix B, Section 7.1.3.1 within the time frame of opacity stability guaranteed by the attenuator manufacturer. The manufacturer's guarantee of stability shall be on site available for inspection.	Minn. R. 7017.1210, subp. 4
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
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)
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130
CEMS/COMS - EXCESS EMISSIONS/DOWNTIME REPORTS (EER's)	Minn. R. 7017.1110, subp. 1 & 2
See Table B	
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 - 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
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: GP 001 Boilers 1A, 2A, and 3A**Associated Items:** EU 001 Boiler No. 1A

EU 002 Boiler No. 2A

EU 003 Boiler No. 3A

What to do	Why to do it
Sulfur Dioxide: less than or equal to 2.06 lbs/million Btu heat input using 1-Hour Average basis when only two of the three boilers in GP 001 are operating. The limit individually applies to each boiler and applies until the startup of the wood fired boiler. See the requirements table under EU001, EU002, and EU003 for sulfur dioxide limits that apply after the startup of the wood fired boiler.	Minn. R. 7009.0020 to not cause or contribute to a violation of the sulfur dioxide ambient air standard in Minn. R. 7009.0080
Sulfur Dioxide: less than or equal to 1.58 lbs/million Btu heat input using 1-Hour Average basis when all three boilers in GP 001 are operating. The limit individually applies to each boiler and applies until the startup of the wood fired boiler. See the requirements table under EU001, EU002, and EU003 for sulfur dioxide limits that apply after the startup of the wood fired boiler.	Minn. R. 7009.0020 to not cause or contribute to a violation of the sulfur dioxide ambient air standard in Minn. R. 7009.0080
Fuel Usage Limit: The Permittee shall not combust more than a total of 500 pounds per year of oily cellulose-based sorbents (oily rags) in the emission units in GP 001. Each day that oily cellulose-based sorbents (oily rags) are burned in one of the boilers, record the amount burned. By the 15th of each month, calculate the amount of cellulose-based sorbents (oily rags) that were burned in the preceding 12 months.	Minn. R. 7007.0800, subp. 2
Fuel Usage Limit: The Permittee shall limit the total used oil combusted in the emission units in GP 001 to 5,000 gallons per year. The Permittee shall limit combustion of used oil to 5% of total heat input on an hourly basis in each emission unit, and as follows: EU 001: 77 gallons per hour EU 002: 77 gallons per hour EU 003: 86 gallons per hour Each day that used oil is burned in one of the boilers, record the amount burned. By the 15th of each month, calculate the amount of used oil that was burned in the preceding 12 months.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: GP 002 Material Handling Baghouses**Associated Items:** CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

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

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

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

CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

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

What to do	Why to do it
No visible emissions allowed.	Title I Condition: to ensure compliance with PM10 BACT limit
Visible Emissions: The Permittee shall check the fabric filter stacks for any visible emissions once each day of operation during daylight hours. For days in which inclement weather prohibits a visible emissions check, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.	Title I Condition: to ensure compliance with PM10 BACT limit
Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit. CE004 Pressure Drop Range: 2 to 10 inches water guage CE008 Pressure Drop Range: 2 to 6 inches water guage CE009 Pressure Drop Range: 4 to 7 inches water guage* CE010 Pressure Drop Range: 4 to 7 inches water guage* CE011 Pressure Drop Range: 2 to 6 inches water guage CE012 Pressure Drop Range: 2 to 6 inches water guage CE013 Pressure Drop Range: NA (no forced air flow)	Title I Condition: to ensure compliance with PM10 BACT limit
* The normal operating condition of pulse jet filters is a pressure drop of 4 to 5 inches. The timer maintains this setting, so if the pressure drop reaches 7 inches, the cleaning cycle is reduced to 4 second intervals. If the pressure drop reaches 8 inches and the timer has been adjusted, the bags should be changed.	continued from above
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment when the emission unit is in operation.	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: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently 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
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Initial Startup of the wood fired boiler. Testing shall be performed for PM10 from one of the material handling baghouses with the highest calculated input grain loading.	Title I Condition: to determine compliance with PM10 BACT limit

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 001 Boiler No. 1A**Associated Items:** CE 001 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 1A, 2A, and 3A

MR 002 Opacity Monitor

MR 003 Oxygen Monitor

MR 014 Extracted sample SO2 monitor

SV 019 Boilers 1A and 2A

What to do	Why to do it
EMISSION AND FUEL LIMITS	hdr
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Particulate Matter < 10 micron: less than or equal to 0.074 lbs/million Btu heat input , inclusive of soot blowing, on a 24 hour average basis.	Title I Condition: 40 CFR 52.21(k) Ambient Impacts Analysis
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity. An exceedance of this opacity standard occurs whenever any one-hour period contains two or more six-minute periods during which the average opacity exceeds 20 percent or whenever any one-hour period contains one or more six-minute periods during which the average opacity exceeds 60 percent.	40 CFR Part 64, also meets the requirements of Minn. R. 7011.0510, subp. 2
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input using 1-Hour Average . See GP 001 for additional SO2 emissions limits. This limit applies until the startup of the wood fired boiler.	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 1.58 lbs/million Btu heat input based on a 1-hour average. This limit applies after the startup of the wood fired boiler.	Minn. R. 7009, Ambient Standards
OPERATING CONDITIONS	hdr
Soot may be blown only two hours per day.	Title I Condition: 40 CFR 52.21(k) Ambient Impacts Analysis
Fuels Allowed: bituminous coal, subbituminous coal, used oil, natural gas and oily cellulose-based sorbents (including rags).	Minn. R. 7007.0800, subp. 2
Vent emissions through SV019 prior to startup of the wood boiler.	40 CFR 50, Minn. R. 7009
PERFORMANCE TESTING	hdr
Performance Test: due before end of each 60 months starting 10/06/1999 to measure particulate matter emissions from EU 001. The performance tests shall be conducted at an interval not to exceed 60 months between tests. The first test required under this condition shall be conducted by 10/06/2004.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after 06/30/2005 for PM10 emissions. Testing shall be conducted during soot-blowing conditions as well as non-soot-blowing conditions. Emissions from three runs of non-soot-blowing emissions and from one run during which a normal duration soot-blowing occurs shall be collected. Compliance shall be determined by taking the average of the three non-soot-blowing tests x 22 hours per day, plus the result of the soot-blowing-test x 2 hours per day, then summed and averaged over a 24-hour period.	Title I Condition: to determine compliance with PM10 limit
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)

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited to an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 3(B)
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.</p>	Minn. R. 7007.0800, subp. 2
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average rate achieved during that performance test.</p> <p>If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001-7017.2060.</p>	Minn. R. 7017.2020, subp. 4
CONTINUOUS MONITORING REQUIREMENTS	hdr
Emissions Monitoring: The Permittee shall use a COMS to measure opacity emissions from EU 001.	Minn. R. 7007.0800, subp. 2
Emissions Monitoring: The Permittee shall use a SO2 CEMS to measure SO2 emissions from EU 001.	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT - see also CE 001	hdr
The electrostatic precipitator (CE 001) shall be operated at all times when the emission unit is in operation. See CE 001 for electrostatic precipitator requirements.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 002 Boiler No. 2A**Associated Items:** CE 002 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 1A, 2A, and 3A

MR 005 Opacity Monitor

MR 006 Oxygen Monitor

MR 015 Extracted sample SO2 monitor

SV 019 Boilers 1A and 2A

What to do	Why to do it
EMISSION AND FUEL LIMITS	hdr
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Particulate Matter < 10 micron: less than or equal to 0.074 lbs/million Btu heat input , inclusive of soot blowing, on a 24 hour average basis.	Title I Condition: 40 CFR 52.21(k) Ambient Impacts Analysis
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity. An exceedance of this opacity standard occurs whenever any one-hour period contains two or more six-minute periods during which the average opacity exceeds 20 percent or whenever any one-hour period contains one or more six-minute periods during which the average opacity exceeds 60 percent.	40 CFR Part 64, also meets the requirements of Minn. R. 7011.0510, subp. 2
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input using 1-Hour Average . See GP 001 for additional SO2 emissions limits. This limit applies until the startup of the wood fired boiler.	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 1.58 lbs/million Btu heat input based on a 1-hour average. This limit applies after the startup of the wood fired boiler.	Minn. R. 7009, Ambient Standards
OPERATING CONDITIONS	hdr
Soot may be blown only two hours per day.	Title I Condition: 40 CFR 52.21(k) Ambient Impacts Analysis
Fuels Allowed: bituminous coal, subbituminous coal, natural gas, used oil, and oily cellulose-based sorbents (including rags).	Minn. R. 7007.0800, subp. 2
Vent emissions through SV019 prior to startup of the wood boiler.	40 CFR 50, Minn. R. 7009
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 10/06/1999 to measure particulate matter emissions from EU 002. The performance tests shall be conducted at an interval not to exceed 60 months between tests. The first test required under this condition shall be conducted by 10/06/2004.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after 06/30/2005 for PM10 emissions. Testing shall be conducted during soot-blowing conditions as well as non-soot-blowing conditions. Emissions from three runs of non-soot-blowing emissions and from one run during which a normal duration soot-blowing occurs shall be collected. Compliance shall be determined by taking the average of the three non-soot-blowing tests x 22 hours per day, plus the result of the soot-blowing-test x 2 hours per day, then summed and averaged over a 24-hour period.	Title I Condition: to determine compliance with PM10 limit
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)

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited to an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 3(B)
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.</p>	Minn. R. 7007.0800, subp. 2
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average rate achieved during that performance test.</p> <p>If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001-7017.2060.</p>	Minn. R. 7017.2020, subp. 4
CONTINUOUS MONITORING REQUIREMENTS	hdr
Emissions Monitoring: The Permittee shall use a COMS to measure opacity emissions from EU 002.	Minn. R. 7007.0800, subp. 2
Emissions Monitoring: The Permittee shall use a SO2 CEMS to measure SO2 emissions from EU 002.	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT - see also CE 002	hdr
The electrostatic precipitator (CE 002) shall be operated at all times when the emission unit is in operation. See CE 002 for electrostatic precipitator requirements.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 003 Boiler No. 3A**Associated Items:** CE 003 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 1A, 2A, and 3A

MR 008 Opacity Monitor

MR 009 Oxygen Monitor

MR 016 Extracted sample SO2 monitor

SV 003 Boiler 3A

What to do	Why to do it
EMISSION AND FUEL LIMITS	hdr
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Particulate Matter < 10 micron: less than or equal to 0.128 lbs/million Btu heat input, inclusive of soot blowing, on a 24 hour average basis.	Title I Condition: 40 CFR 52.21(k) Ambient Impacts Analysis
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity. An exceedance of this opacity standard occurs whenever any one-hour period contains two or more six-minute periods during which the average opacity exceeds 20 percent or whenever any one-hour period contains one or more six-minute periods during which the average opacity exceeds 60 percent.	40 CFR Part 64, also meets the requirements of Minn. R. 7011.0510, subp. 2
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input using 1-Hour Average. See GP 001 for additional SO2 emissions limits. This limit applies until the startup of the wood fired boiler.	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 1.58 lbs/million Btu heat input based on a 1-hour average. This limit applies after the startup of the wood fired boiler.	Minn. R. 7009, Ambient Standards
OPERATING CONDITIONS	hdr
Soot may be blown only two hours per day.	Title I Condition: 40 CFR 52.21(k) Ambient Impacts Analysis
Fuels Allowed: bituminous coal, subbituminous coal, natural gas, used oil, and oily cellulose-based sorbents (including rags).	Minn. R. 7007.0800, subp. 2
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 10/06/1999 to measure particulate matter emissions from EU 003. The performance tests shall be conducted at an interval not to exceed 60 months between tests. The first test required under this condition shall be conducted by 10/06/2004.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after 06/30/2005 for PM10 emissions. Testing shall be conducted during soot-blowing conditions as well as non-soot-blowing conditions. Emissions from three runs of non-soot-blowing emissions and from one run during which a normal duration soot-blowing occurs shall be collected. Compliance shall be determined by taking the average of the three non-soot-blowing tests x 22 hours per day, plus the result of the soot-blowing-test x 2 hours per day, then summed and averaged over a 24-hour period.	Title I Condition: to determine compliance with PM10 limit
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)

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited to an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7017.2025, subp. 3(B)
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.</p>	Minn. R. 7007.0800, subp. 2
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average rate achieved during that performance test.</p> <p>If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001-7017.2060.</p>	Minn. R. 7017.2020, subp. 4
CONTINUOUS MONITORING REQUIREMENTS	hdr
Emissions Monitoring: The Permittee shall use a COMS to measure opacity emissions from EU 003.	Minn. R. 7007.0800, subp. 2
Emissions Monitoring: The Permittee shall use a SO2 CEMS to measure SO2 emissions from EU 003.	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT - see also CE 003	hdr
The electrostatic precipitator (CE 003) shall be operated at all times when the emission unit is in operation. See CE 003 for electrostatic precipitator requirements.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 004 Coal Ash Silo**Associated Items:** CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 004 Coal Ash Silo

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot unless required to further reduce emissions to the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	40 CFR Section 52.21(k), Ambient Impacts Analysis
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715
For compliance demonstration, see GP002 requirements table.	hdr

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 005 High School Boiler 1**Associated Items:** SV 005 High School Boiler 1

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Fuel use limited to natural gas.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 006 High School Boiler 2**Associated Items:** SV 006 High School Boiler 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Fuel use limited to natural gas.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 007 Wood Fired Boiler**Associated Items:** CE 005 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 006 Electrostatic Precipitator - High Efficiency

CE 007 Selective Noncatalytic Reduction for NOX

MR 010 Wood Boiler Opacity Monitor

MR 011 Wood Boiler NOx Monitor

MR 012 Wood Boiler CO Monitor

MR 013 Wood Boiler Oxygen Monitor

SV 007 LEA Wood Fired Boiler

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.025 lbs/million Btu heat input . This limit applies at all times, except during periods of startup, shutdown or malfunction.	Title I Condition: BACT limit; 40 CFR 52.21(j), also meets the requirements of 40 CFR Section 63.7500 and 40 CFR Section 60.43b(c)(1)
Particulate Matter < 10 micron: less than or equal to 0.025 lbs/million Btu heat input . This limit applies at all times, except during periods of startup, shutdown or malfunction.	Title I Condition: BACT limit; 40 CFR 52.21(j)
Carbon Monoxide: less than or equal to 0.3 lbs/million Btu heat input based on a 4-hour block average. ""Four-hour block average" means the average of all hourly emission rates when the emissions unit is operating over six discrete four-hour periods beginning at midnight. This limit applies at all times, except during periods of startup, shutdown or malfunction.	Title I Condition: BACT limit; 40 CFR 52.21(j), also meets the requirements of 40 CFR Section 63.7500
Hydrochloric acid: less than or equal to 0.02 lbs/million Btu heat input . This limit applies at all times, except during periods of startup, shutdown or malfunction.	40 CFR Section 63.7500
Nitrogen Oxides: less than or equal to 0.15 lbs/million Btu heat input based on a 30-day rolling average.	Title I Condition: BACT limit; 40 CFR 52.21(j)
Mercury: less than or equal to 0.000003 lbs/million Btu heat input . This limit applies at all times, except during periods of startup, shutdown or malfunction.	40 CFR Section 63.7500
Opacity: less than or equal to 10 percent based on a 1-hour block average.	40 CFR Section 63.7500
Opacity: less than or equal to 20 percent based on a 6-minute average, except for one 6-minute period per hour of not more than 27 percent opacity. This limit applies at all times, except during periods of startup, shutdown or malfunction.	40 CFR Section 60.43b(f)
Ammonia Slip: limited to less than or equal to 25 ppm. If the ammonia slip exceeds this level, the SNCR system shall be adjusted to reduce the ammonia slip to less than 25 ppm, or shut down until repairs are made and normal operating conditions are achieved.	Minn. R. 7007.0800, subp. 2
OPERATING LIMITS	hdr
Fuel use limited to untreated wood, such as, but not limited to, logging waste, trees, brush, etc. Untreated wood is defined as any wood that has not been subject to any chemical treatment or coating. Examples are: 1) untreated residuals from manufacturing processes such as furniture, cabinet, and pallet making and other wood product manufacture; 2) construction waste; 3) urban and park tree trimming and forest residuals; 4) wood from trees downed by storms; 5) trees removed for urban development; 6) trees grown specifically to be used as fuel; and 6) trees removed as part of a timber management plan.	Minn. R. 7007.0800, subp. 2,
The SNCR system will be adjusted or may be shut down when the ammonia slip exceeds the limit set above, until such time as the system is returned to normal operation.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

At all times, including periods of startup, shutdown, and malfunction, you shall operate and maintain any affected source, including the associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards.	40 CFR Section 63.6(e)(1)(i) and 40 CFR Section 60.11(d)
Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required below and by 40 CFR Section 63.6(e)(3).	
Fuel use is limited in chlorine content to the maximum that was burned during the compliance test that demonstrated compliance with the HCl emission limit. Procedures for determining the maximum chlorine content are specified at 40 CFR Section 63.7530(c)(1)(i)-(iii).	40 CFR Section 63.7530(c)(1)
Fuel use is limited in mercury content to the maximum that was burned during the compliance test that demonstrated compliance with the mercury emission limit. Procedures for determining the maximum mercury content are specified at 40 CFR Section 63.7530(c)(3)(i)-(iii).	40 CFR Section 63.7530(c)(3)
INITIAL COMPLIANCE DEMONSTRATION	hdr
Performance Test: due 60 days after achieving maximum capacity but no later than 180 days after initial startup for particulate matter, PM10, and opacity. You must establish the minimum voltage and secondary current (or total power input) as defined in 40 CFR Section 63.7575.	40 CFR Section 63.7510(a), 40 CFR Section 60.11(e), Title I Condition; compliance with PM10 BACT limit
Determine compliance with the emission limits for hydrogen chloride and mercury through fuel analysis within 180 days of initial startup. Follow the procedures specified in 40 CFR Section 63.7521 and Table 6 to Subp. DDDDD.	40 CFR Section 63.7530(d)
CONTINUOUS MONITORING REQUIREMENTS	hdr
Install, maintain and operate a monitor to measure stack carbon monoxide emissions. The monitor shall meet the requirements of 40 CFR 63.7525(a).	40 CFR Section 63.7525(a)
For more specific requirements, see the MR 012 table in this permit.	
Install, maintain, and operate a continuous monitor to measure the opacity of stack emissions. The monitor shall meet the requirements of 40 CFR 63.7525(b).	40 CFR Section 63.7525(b) 40 CFR Section 60.48b(a)
For more specific requirements see the MR 010 table in this permit.	
Install, operate and maintain a continuous monitor to measure stack nitrogen oxides emissions. Installation, operation and maintenance shall be in accordance with 40 CFR Section 60.13 and 40 CFR 60, Appendix B.	Title I Condition: Monitoring of BACT limit 40 CFR Section 64.3(d)(2)
For more specific requirements, see the MR 011 table in this permit.	
SUBMITTALS AND REPORTING	hdr
Performance Test Notification (written): due 60 days before Performance Test	40 CFR Section 63.7545 Minn. R. 7017.2030, subp. 1, 40 CFR Section 63.7
RECORDKEEPING	hdr
Keep all records readily available and on site for a period of 5 years.	40 CFR Section 60.7(b), 40 CFR Section 63.10(b)(1)
Maintain relevant records of each startup, shutdown, or malfunction of operation equipment and the occurrence and duration of each malfunction of the required air pollution control and monitoring equipment.	
Maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection.	40 CFR Section 60.7(f)
Keep records of the type and amount of all fuels burned to demonstrate that all fuel types and mixtures of fuels burned would result in lower emissions of HCl and mercury than the applicable emission limit.	40 CFR Section 63.7540(a)(2)
If you plan to burn a new type of fuel, you must recalculate the HCl emission rate using Equation 9 of 40 CFR Section 63.7530 and 40 CFR Section 63.7540(a)(3). You must also recalculate the mercury emission rate according to 40 CFR Section 7540(a)(7) and equation 11 of 40 CFR Section 63.7530.	
Keep records of carbon monoxide levels according to 40 CFR Section 63.7555(b).	40 CFR Section 63.7540(a)(10)
Full recordkeeping requirements are specified in 40 CFR Section 63.7555 and include copies of all notifications, reports, tests, fuel analyses, compliance demonstrations, performance demonstrations, CEM and COMs data, deviations, fuel use, and all calculations that demonstrate compliance with emission limits.	40 CFR Section 63.7555

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19**

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

STARTUP, SHUTDOWN AND MALFUNCTION PLAN	hdr
Startup, shutdown, and malfunction plan. (i) The owner or operator of an affected source must develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard. This plan must be developed by the owner or operator by the source's compliance date for that relevant standard. The purpose of the startup, shutdown, and malfunction plan is to	40 CFR Section 63.6(e)(3)(i)
(A) Ensure that, at all times, that you operate and maintain each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established by paragraph (e)(1)(i) of this section; (B) Ensure that you are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and (C) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).	continued from above
During periods of startup, shutdown, and malfunction, you must operate and maintain such source (including associated air pollution control and monitoring equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed under paragraph (e)(3)(i) of this section.	40 CFR Section 63.6(e)(3)(ii)
When actions taken by the owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a checklist, or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for that event.	40 CFR Section 63.6(e)(3)(iii)
In addition, you must keep records of these events as specified in Section 63.10(b), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, you shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in Section 63.10(d)(5).	continued from above
If an action taken by you during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then you must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with Section 63.10(d)(5) (unless you make alternative reporting arrangements, in advance, with the Administrator).	40 CFR Section 63.6(e)(3)(iv)
You must maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the Administrator. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in paragraph (e)(3)(viii) of this section, you must maintain at the affected source each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for inspection and copying by the Administrator for a period of 5 years after revision of the plan.	40 CFR Section 63.6(e)(3)(v)
If at any time after adoption of a startup, shutdown, and malfunction plan the affected source ceases operation or is otherwise no longer subject to the provisions of this part, you must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the Administrator. The Administrator may at any time request in writing that you submit a copy of any startup, shutdown, and malfunction plan (or a portion thereof) which is maintained at the affected source or in your possession.	continued from above.

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Upon receipt of such a request, you must promptly submit a copy of the requested plan (or a portion thereof) to the Administrator. The Administrator must request that you submit a particular startup, shutdown, or malfunction plan (or a portion thereof) whenever a member of the public submits a specific and reasonable request to examine or to receive a copy of that plan or portion of a plan. You may elect to submit the required copy of any startup, shutdown, and malfunction plan to the Administrator in an electronic format. If you claim that any portion of such a startup, shutdown, and malfunction plan is confidential business information entitled to protection from disclosure under section 114(c) of the Act or 40 CFR 2.301, the material which is claimed as confidential must be clearly designated in the submission.	continued from above
To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, you may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection or submitted when requested by the Administrator.	40 CFR Section 63.6(e)(3)(vi)
Based on the results of a determination made under paragraph (e)(1)(i) of this section, the Administrator may require that you make changes to the startup, shutdown, and malfunction plan for that source. The Administrator must require appropriate revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan: (A) Does not address a startup, shutdown, or malfunction event that has occurred; (B) Fails to provide for the operation of the source (including associated air pollution control and monitoring equipment) during a startup, shutdown, or malfunction event in a manner consistent with the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;	40 CFR Section 63.6(e)(3)(vii)
(C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable; or (D) Includes an event that does not meet the definition of startup, shutdown, or malfunction listed in Section 63.2.	continued from above
You may periodically revise the startup, shutdown, and malfunction plan for the affected source as necessary to satisfy the requirements of this part or to reflect changes in equipment or procedures at the affected source. Unless the permitting authority provides otherwise, you may make such revisions to the startup, shutdown, and malfunction plan without prior approval by the Administrator or the permitting authority. However, each such revision to a startup, shutdown, and malfunction plan must be reported in the semiannual report required by Section 63.10(d)(5).	40 CFR Section 63.6(e)(3)(viii)
If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time you developed the plan, you must revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment.	continued from above
In the event that you make any revision to the startup, shutdown, and malfunction plan which alters the scope of the activities at the source which are deemed to be a startup, shutdown, or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this part, the revised plan shall not take effect until after the you have provided a written notice describing the revision to the permitting authority.	continued from above
The title V permit for an affected source must require that you adopt a startup, shutdown, and malfunction plan which conforms to the provisions of this part, and that the owner or operator operate and maintain the source in accordance with the procedures specified in the current startup, shutdown, and malfunction plan. However, any revisions made to the startup, shutdown, and malfunction plan in accordance with the procedures established by this part shall not be deemed to constitute permit revisions under part 70 or part 71 of this chapter. Moreover, none of the procedures specified by the startup, shutdown, and malfunction plan for an affected source shall be deemed to fall within the permit shield provision in section 504(f) of the Act.	40 CFR Section 63.6(e)(3)(ix)
PERFORMANCE STACK EMISSION TESTING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-21

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

<p>All performance tests and fuel analyses used for demonstrating compliance with emission limits must be conducted on an annual basis except as provided for in 40 CFR Section 63.7515. If three consecutive tests show compliance with the emission limits, you may choose to conduct the performance tests for these pollutants every third year. If a test shows noncompliance with an emission limit you must conduct annual performance tests until all performance tests over a consecutive 3 year period show compliance.</p>	<p>40 CFR Section 63.7515</p>
<p>Performance tests and procedures under 40 CFR 63.7520 and 40 CFR Section 60.46b(d) must be followed. 40 CFR Section 63.7520 calls for:</p> <ul style="list-style-type: none"> - a 60 day notice of intent to test, -development and submittal of a site specific test plan, -request and use of performance audit samples (request due 30 days prior to the test), -provision of adequate testing facilities, -testing during representative operation, -specifies that methods used be consistent with those specified in Parts 51, 60, 61, and 63--The methods are specified in Table 5 to Subp. DDDDD, and -submittal of results within 60 days of the performance test (Minn. R. requires submittal within 45 days, and will take precedence.) <p>40 CFR Section 60.46b(d) specifies test methods for particulate and opacity. Particulate matter test methods are the same as those specified in Table 5 to subp. DDDDD.</p>	<p>40 CFR Section 63.7520 40 CFR Section 60b(d) and (e)</p>
<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	<p>Minn. R. 7017.2025, subp. 2(A) and 3(B)</p>
<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited to an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 80% of any applicable emission limit for which compliance is demonstrated, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 80% of all applicable emission limits for which compliance is demonstrated, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	<p>Minn. R. 7017.2025, subp. 3(B)</p>
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Maintain documentation of all STET operation to demonstrate compliance with this limit. The boiler must meet emission limits during STET operation.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results demonstrate compliance at 80% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average rate achieved during that performance test.</p> <p>If performance test results demonstrate compliance at greater than 80% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	<p>Minn. R. 7007.0800, subp. 2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22**

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

CONTROL EQUIPMENT - see also CE 006	hdr
The electrostatic precipitator (CE 006) shall be operated at all times when the emission unit is in operation. See CE 006 for electrostatic precipitator requirements.	Minn. R. 7007.0800, subp. 2

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 008 Enclosed wood unloading**Associated Items:** CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 008 Enclosed Wood Unloading Area

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715
For compliance demonstration, see GP002 requirements table.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-24**

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 009 Wood Storage Silo**Associated Items:** CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

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

SV 009 Wood Storage Silo Vent #1

SV 010 Wood Storage Silo Vent #2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715
For compliance demonstration, see GP002 requirements table.	hdr

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 010 Wood Conveyor System**Associated Items:** CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 011 Wood Conveyor

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715
For compliance demonstration, see GP002 requirements table.	hdr

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 011 Wood Transfer/Metering Bin**Associated Items:** CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 012 Wood Transfer/Metering Bin

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715
For compliance demonstration, see GP002 requirements table.	hdr

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: EU 012 Emergency Generator**Associated Items:** SV 013 Emergency Generator

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.14 lbs/million Btu heat input	Title I Condition: BACT limit; 40 CFR 52.21(j)
Nitrogen Oxides: less than or equal to 2.88 lbs/million Btu heat input	Title I Condition: BACT limit; 40 CFR 52.21(j)
Carbon Monoxide: less than or equal to 0.85 lbs/million Btu heat input	Title I Condition: BACT limit; 40 CFR 52.21(j)
Opacity: less than or equal to 20 percent once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
OPERATING CONDITIONS	hdr
Fuel use limited to distillate oil with a maximum of 0.5% sulfur by weight.	Minn. R. 7007.0800, subp. 2
Operating Hours: less than or equal to 500 hours/year based on a 12 month rolling sum.	Title I Condition: 40 CFR 52.21(k), Ambient Impacts Analysis
MONITORING CONDITIONS	hdr
Record the previous month's hours of operation by the 15th of each month. Add to the preceeding 11 month's hours of operation and compare to the limit. Record the results.	Title I Condition: To demonstrate compliance with limit on hours of operation
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of distillate oil, certifying that the sulfur content does not exceed 0.5% by weight.	Minn. R. 7007.0800, subps. 4 & 5
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup for PM10, NOx and CO. For performance test required notifications and submittals see the total facility requirements table.	Title I Condition: determine compliance with BACT limits
NESHAP REQUIREMENTS	hdr
Within 120 calendar days after the source becomes subject to the relevant standard (initial startup), provide the following information: (i) The name and address of the owner or operator; (ii) The address (i.e., physical location) of the affected source; (iii) An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;	40 CFR Section 63.6590 40 CFR Section 63.6645(d) 40 CFR Section 63.9(b)(2)(i)-(v)
(iv) A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and (v) A statement of whether the affected source is a major source or an area source.	continued from above

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

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

SV 014 Ash Silo Vent #1

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: BACT limit; 40 CFR 52.21(j)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715
For compliance demonstration, see GP002 requirements table.	hdr

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: CE 001 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 001 Boiler No. 1A

What to do	Why to do it
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Secondary current and voltage: greater than or equal to 175 kV and greater than or equal to 1511 amperes, or total power input greater than or equal to 52 kW.	Minn. R. 7017.2025
Three-Hour Average: Readings will be taken every 15 minutes of operation. The total from all readings taken will be used to calculate the average based on all readings taken during each three-hour period.	Minn. R. 7017.2025
This requirement takes effect 180 days from permit issuance.	

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: CE 002 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 002 Boiler No. 2A

What to do	Why to do it
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Secondary current and voltage: greater than or equal to 166 kV and greater than or equal to 1179 amperes, or total power input greater than or equal to 51 kW.	Minn. R. 7017.2025
Three-Hour Average: Readings will be taken every 15 minutes of operation. The total from all readings taken will be used to calculate the average based on all readings taken during each three-hour period.	Minn. R. 7017.2025
This requirement takes effect 180 days from permit issuance.	

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: CE 003 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 003 Boiler No. 3A

What to do	Why to do it
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Secondary current and voltage: greater than or equal to 284 kV and greater than or equal to 3300 amperes, or total power input greater than or equal to 107 kW.	Minn. R. 7017.2025
Three-Hour Average: Readings will be taken every 15 minutes of operation. The total from all readings taken will be used to calculate the average based on all readings taken during each three-hour period.	Minn. R. 7017.2025
This requirement takes effect 180 days from permit issuance.	

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: CE 006 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 007 Wood Fired Boiler

What to do	Why to do it
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
At all times, including periods of startup, shutdown, and malfunction, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that you reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices.	40 CFR Section 63.7505(b), 40 CFR Section 63.6(e)(1)(i)
The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require you to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required by 40 CFR Section 63.6(e), review of operation and maintenance records, and inspection of the source.	continued from above
Collect the secondary current and Voltage or total power input monitoring system data for the electrostatic precipitator according to 40 CFR Section 63.7525 and 63.7535; and reduce the data to 3-hour block averages; and maintain the 3-hour average secondary current and voltage or total power input at or above the operating limits established during the performance test according to 40 CFR Section 63.7530(c).	40 CFR Section 63.7530 40 CFR Section 63.7540(a)
Collect the secondary current and voltage or total power input monitoring system data for the electrostatic precipitator according to 40 CFR Section 63.7525.	40 CFR Section 63.7540 and Table 8 to Subp. DDDDD
Reduce the data to 3-hour block averages; and	continued from above
Maintain the 3-hour average secondary current and voltage or total power input at or above the level established during the most recent performance test that demonstrated compliance with the particulate matter and PM10 emission limits.	

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Hibbing Public Utilities
Permit Number: 13700027 - 005

Subject Item: FS 002 Truck Traffic

What to do	Why to do it
If the temperature is less than 32 degrees F, and the pavement is dry, sweeping of all traffic areas is required twice monthly. Sweeping is not required if the pavement is snow or ice covered.	Minn. R. 7011.0150
If the temperature is greater than 32 degrees F, and the pavement is dry, sweeping and flushing are required twice monthly.	continued from above

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Hibbing Public Utilities
Permit Number: 13700027 - 005

Subject Item: FS 003 Coal Ash Loadout

What to do	Why to do it
Ash shall be wetted prior to loadout.	Title I Condition: 40 CFR 52.21(k), Ambient Impacts Analysis

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Hibbing Public Utilities
Permit Number: 13700027 - 005

Subject Item: FS 004 Wood Ash Loadout

What to do	Why to do it
Ash shall be wetted prior to loadout.	Title I Condition: 40 CFR 52.21(k), Ambient Impacts Analysis

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 002 Opacity Monitor**Associated Items:** EU 001 Boiler No. 1A

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
COMS Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the COMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1; 40 CFR Section 60.8(a)
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 003 Oxygen Monitor**Associated Items:** EU 001 Boiler No. 1A

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	dr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 005 Opacity Monitor**Associated Items:** EU 002 Boiler No. 2A

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
COMS Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the COMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1; 40 CFR Section 60.8(a)
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 006 Oxygen Monitor**Associated Items:** EU 002 Boiler No. 2A

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 008 Opacity Monitor**Associated Items:** EU 003 Boiler No. 3A

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
COMS Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the COMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1; 40 CFR Section 60.8(a)
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 009 Oxygen Monitor**Associated Items:** EU 003 Boiler No. 3A

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 010 Wood Boiler Opacity Monitor**Associated Items:** EU 007 Wood Fired Boiler

What to do	Why to do it
CONTINUOUS OPACITY MONITORING SYSTEMS (COMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
COMS Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the COMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1; 40 CFR Section 60.8(a)
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 011 Wood Boiler NOx Monitor**Associated Items:** EU 007 Wood Fired Boiler

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 012 Wood Boiler CO Monitor**Associated Items:** EU 007 Wood Fired Boiler

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 013 Wood Boiler Oxygen Monitor**Associated Items:** EU 007 Wood Fired Boiler

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 014 Extracted sample SO2 monitor**Associated Items:** CM 007 DA002

EU 001 Boiler No. 1A

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 015 Extracted sample SO2 monitor**Associated Items:** CM 008 DA002

EU 002 Boiler No. 2A

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

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

06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

Subject Item: MR 016 Extracted sample SO2 monitor**Associated Items:** CM 009 DA002

EU 003 Boiler No. 3A

What to do	Why to do it
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) Requirements (see additional requirements as found under the same heading at the Total Facility level)	hdr
CEM Certification Test: due 90 days after Excess Emissions/Downtime Reports (EER's) are first required for the CEMS. The first EER is due 30 days after the end of the calendar quarter following permit issuance. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test. A CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEM Certification Test. A RATA is not required in any calendar year if a RATA conducted in the previous year demonstrated a relative accuracy value of less than 15 percent or if the associated emissions unit operated less than 48 hours during the calendar year. If the exception is used, the next RATA shall be conducted during the first half of the following calendar year. RATAs shall be conducted at least 3 months apart according to 40 CFR pt. 60, Appendix F, section 5.1.1.	40 CFR pt. 60, Appendix F, section 5.1.1

TABLE B: SUBMITTALS

B-1 06/05/07

Facility Name: Hibbing Public Utilities
Permit Number: 13700027 - 005

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.

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

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

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

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

Send 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

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

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

Table B 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.

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup. The notification shall include the design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility.	EU007
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began.	EU007
Notification	due 120 days after 11/12/2004, (effective date of 40 CFR Subp. DDDDD) for the existing boilers, as applicable.	Total Facility
Performance Test Plan	due 30 days before Performance Test that is a site-specific plan to the EPA Administrator and the Commissioner for review and approval according to the procedures and requirements in 40 CFR Section 63.7520.	EU007
Report	due 60 days before Anticipated Date of Initial Startup that is a site-specific fuel analysis plan to the EPA Administrator for review and approval according to the procedures and requirements in 40 CFR Section 63.7521.	EU007
Testing Frequency Plan	due 60 days after Initial Performance Test for PM10 emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	EU001, EU002, EU003, GP002

TABLE B: RECURRENT SUBMITTALS**B-3** 06/05/07

Facility Name: Hibbing Public Utilities

Permit Number: 13700027 - 005

What to send	When to send	Portion of Facility Affected
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar quarter following Cylinder Gas Audit. A CGA is not required during any calendar quarter in which a RATA was performed.	MR003, MR006, MR009, MR011, MR012, MR013, MR014, MR015, MR016
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance. Submit Deviations Reporting Form DRF-1 as amended. The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions. The EER must be submitted even if there were no excess emissions, downtime or bypasses during the quarter.	Total Facility
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) was conducted.	MR003, MR006, MR009, MR011, MR012, MR013, MR014, MR015, MR016
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 06/30/2005 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations. The report must comply with and contain the information specified in 40 CFR Section 63.7550.	EU007
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 09/12/1997 . The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations. For the Wood Fired Boiler, the report must contain the information specified in Table 9 to Subpart DDDDD of Part 63, Number 1 and 40 CFR Section 63.7550.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 09/12/1997 (for the previous calendar year). To be submitted on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year. A copy of this report shall also be submitted to the US EPA Regional Office.	Total Facility

APPENDIX MATERIAL

Facility Name: Hibbing Public Utilities

Permit Number: 13700027-004

Insignificant Activities Required to be Listed

Description	Basis	Applicable Regulations
Facility wide VOC usage in cleaning solvents	Minn. R. 7007.1300, subp. 3 H (1)	
4 Welders	Minn. R. 7007.1300, subp. 3 H (4)	Minn. R. 7011.0710-0715
Aerosol paints used infrequently for routine maintenance	Minn. R. 7007.1300, subp. 3 K	
Cooling tower 1, actual PM< 1 ton/yr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715
Cooling tower 2, actual PM< 1 ton/yr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715
Coal transfer to bunker, actual PM< 1 ton/yr	Minn. R. 7007.1300, subp. 4	
Reserve coal pile (enclosed), actual PM< 1 ton/yr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715
Coal transfer to reserve coal pile, actual PM< 1 ton/yr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715
Coal reclaim from reserve coal pile, actual PM< 1 ton/yr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715
Ash truck loading, potential PM< 2.28 lb/hr	Minn. R. 7007.1300, subp. 4	
Bead blaster	Minn. R. 7007.1300, subp. 3 D (2)	
Coal Ash Silo, potential PM< 2.28 lb/hr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715
Enclosed Wood Unloading, potential PM <2.28 lb/hr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715 40 CFR 52.21
Enclosed Wood Storage Silo, potential PM<2.28 lb/hr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715 40 CFR 52.21
Wood conveyor System, potential PM<2.28 lb/hr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715 40 CFR 52.21
Wood Transfer/Metering Bin, potential PM<2.28 lb/hr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715 40 CFR 52.21
Wood Ash Storage Silo, potential PM<2.28 lb/hr	Minn. R. 7007.1300, subp. 4	Minn. R. 7011.0710-0715 40 CFR 52.21

Stack Parameters Used in Modeling

SV	Height (ft.)	Diameter (ft.)	Flow Rate (acfm)	Temperature (F)
SV019 Boiler 1A and Boiler 2A	155	10.5	218,296	350
SV002 Boiler 2A	113.2	7.7	109,085	350
SV003 Boiler 3A	121.7	7.5	147,842	350
SV004 Coal Ash Silo	92	1	2373	100
SV005 HS Boiler 1	140	1.92	7850	1800
SV006 HS Boiler 2	140	1.92	6850	1800
SV007 Wood Boiler	150	6.5	94,562	325
SV008 Enclosed Wood Unloading Area	40	2.32	30,000	70
SV009 Wood Silo Vent 1	60	0.489	1,500	70
SV010 Wood Silo Vent 2	60	0.489	1,500	70
SV011 Wood Conveyor	30	0.5	1,800	70
SV012 Wood Transfer/ Metering Bin	85	0.708	3,500	70
SV013 Emergency Generator	50	0.984	12,170	70
SV014 Ash Silo Vent	55	0.33	100	100
SV015 West Cooling Tower Cell 1	39.4	18	557,578	100
SV016 West Cooling Tower Cell 2	39.4	18	557,578	100
SV017 East Cooling Tower Cell 1	39.4	18	498,819	100
SV018 East Cooling Tower Cell 2	39.4	18	498,819	100
SV019 Boilers 1A and 2A after Wood Boiler Startup	155	10.5	218,296	359

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 13700027-005

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 preliminary determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner/Operator Address and Phone Number	Facility Address (SIC Code: 4911)
Hibbing Public Utilities and Laurentian Energy Authority 1902 Sixth Avenue East P.O. Box 249 Hibbing, MN 55753 Phone: (218) 262-7723	Hibbing Public Utilities 1832 Sixth Avenue East Hibbing, MN 55746

Contact: Mr. Charles Berg, Director of Engineering

1.2. Description Of The Facility

The Hibbing Public Utilities Commission (HPUC) operates a co-generation facility for the City of Hibbing. The facility generates electrical power for the City and steam for space heating of businesses, schools, and residences. The HPUC power plant is located in downtown Hibbing and was originally constructed in 1919. The emission units at the source consist of three coal/natural gas-fired boilers, an ash-handling system, as well as the two natural gas-fired boilers located a few blocks away at Hibbing High School that are connected to the HPUC steam distribution system. The five boilers are labeled Boiler No. 1A, Boiler No. 2A, Boiler No. 3A, High School Boiler No. 1, and High School Boiler No. 2.

Boilers 1A, 2A, and 3A are spreader stoker units that can burn subbituminous coal, and bituminous coal. Boilers 1A and 2A can also burn natural gas. Boilers 1A, 2A, and 3A are each equipped with their own electrostatic precipitator (for particulate matter control) and exhaust stack. This permit allows the facility to also burn used oil and oily paper-based sorbents (including oily rags) in Boilers No. 1A, 2A, and 3A. The stacks for Boilers 1A and 2A will be combined into a taller stack prior to the startup of a new wood fired boiler.

The high school boilers combust only natural gas. The High School boilers were constructed in 1972 and connected at that time to the HPUC steam heating system. The HPUC became the sole operator of these units in 1982. However, the change of operator was not considered a modification under New Source Review. Currently these natural gas-fired boilers are only operated a few days per year for emergency back-up. The majority of the steam heat for the school is supplied by the main HPUC boilers.

Boilers No. 1A and 2A are rated at 207 mmBtus (million Btu) per hour (139,000 lbs. of steam per hour). Boiler No. 3A is rated at 243 mmBtus per hour (165,000 lbs. of steam per hour).

Boilers 1A, 2A, and 3A, are individually equipped with Continuous Emission Monitors (CEMs), for opacity, sulfur dioxide, and oxygen. The High School Boilers do not have any CEMs.

There are three steam-driven electric generating turbines at the facility with a total production capacity of 38 Megawatts.

Other air emission sources at the facility include a railcar/truck coal unloading station and an ash transfer system. The coal unloading station is considered an insignificant activity but will be included in the facility's fugitive dust control plan.

This permit reissuance in 2005 of the Title V total facility operating permit authorized construction of an additional boiler and material handling equipment. Specifically, the permit authorized the installation of a wood fired boiler to be used for district heating and electric generation. Also authorized with this permit action was the installation of wood handling and storage equipment.

The wood fired boiler was part of a larger project that includes a wood fired boiler at Virginia Public Utilities. Hibbing Public Utilities and Virginia Public Utilities entered into a joint venture via formation of a third party, Laurentian Energy Authority (LEA), to generate electricity from biomass as required by an Xcel Energy purchase power agreement. LEA will lease the existing turbines to produce 15 MW at Virginia and 20 MW at Hibbing.

1.3 Description of the Activities Allowed By This Permit Action

A condition of the reissuance permit, permit No. 13700028-005, was that the Permittee was to submit pressure drop ranges for each baghouse in the form of a major amendment application. This permit incorporates those pressure drop ranges for the material handling baghouses.

This permit amendment also incorporates limits based on conditions during previous stack emission testing. Requirements are set for the operation of the electrostatic precipitators, and frequency of on-going testing is specified.

Also, some changes were made in the database for the facility description. Some of the stack parameters and location were changed, and some of the newly permitted equipment has been more completely described because vendors have now been chosen. Because some of the stack parameters changed, the Permittee re-performed the computer dispersion modeling done previously for the issuance of the previous permit. That dispersion modeling shows no violation of ambient standards. The dispersion modeling results are attached to this technical support document.

1.4 Facility Emissions:

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
Total Facility Limited Potential Emissions	1845	351	4733	1682	1279	27.6	151.3	175
Total Facility Actual Emissions (2004)	165	199	371	404	229	2.42	HAPs not reported in emission inventory	

*Haps are primarily Hydrogen Chloride.

Non-Title I Emissions Increase Summary

There are no emission increases allowed by this permit issuance.

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

New Source Review

None of the changes proposed are subject to new source review.

Part 70 Permit Program

The facility is a major source under the Part 70 Permitting Program. This permit does not change the status

New Source Performance Standards (NSPS)

None of the proposed changes are subject to new source performance standards.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is an existing major source of hazardous air pollutants. This permit does not change its status.

Minnesota State Rules

There are no new units proposed with this permit application and so no Minnesota Performance Standards are newly applicable.

3. Technical Information

Computer dispersion modeling for particulate matter was completed to show that the changes to the stack parameters and building dimensions would not cause a predicted violation of ambient standards. The results of that modeling are attached.

3.1 Calculations of Potential to Emit

There are minor emissions reductions due to the changes being made. Those calculations are attached.

3.2 Permit Organization

No changes were made to the permit organization.

3.3 Comments Received

Public Notice Period: February 7, 2007 – March 9, 2007

EPA 45-day Review Period: February 7, 2007 – March 26, 2007

4. Conclusion

Based on the information provided by Hibbing Public Utilities, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13700027-005 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Jenny Reinertsen (permit writer/engineer)
 Bob Beresford (enforcement)
 Andy Place (stack testing)
 Jim Robin (peer reviewer)

Attachments: 1. Calculation Spreadsheets
 2. Dispersion Modeling Results

Emission Change Calculations

Dispersion Modeling Results submitted by Sebesta Blomberg

1.1 Ambient Air Quality Analysis

Air dispersion modeling has been completed to analyze LEA impacts on ambient air quantity and is discussed in the sections that follow. All model settings and procedures are as submitted in support of the original permit application.

Summary of ISC-PRIME Settings

This section describes the model options selected for modeling the proposed Laurentian Energy Authority, LLC (LEA) wood-fired electric generation facility to be located at the Hibbing Public Utility site. The analysis utilizes the Industrial Source Complex Short Term model with the PRIME downwash algorithm (ISC-PRIME), version 01228. The model is included within the BEEST dispersion modeling package assembled by Bowman Engineering of Asheville, North Carolina.

Terrain Option

Digitized terrain data for the project area was purchased from Micropath in the form of 30-meter DEM Quads. The Quads were stitched together and converted to NAD83 coordinates using the freeware program 3DEM.

Regulatory Default Option

The regulatory default option was used to employ the Plume Rise Model Enhancements (PRIME) algorithm for treatment of building downwash. The PRIME algorithm includes enhanced dispersion coefficients due to turbulent wake, and reduced plume rise caused by a combination of the descending stream lines in the lee of the building and the increased entrainment in the wake.

Concentration/Deposition Option

The concentration option was used to provide maximum pollutant concentrations that could be compared to Ambient Air Quality Standards. The model was set to provide output in terms of receptor concentration.

Rural/Urban Option

The Auer classification scheme was used to determine land use setting for the model. Rural dispersion coefficients were selected for the area, having greater than 50 percent of the land use within three (3) kilometers is either single-family residential, or agricultural.

Model Averaging Periods

Per USEPA guidance, dispersion modeling analysis is required for those pollutants with emission increases exceeding the major modification threshold.

For the proposed LEA wood-fired electric generation facility only the pollutants NO_x, PM₁₀ and CO require dispersion modeling analysis. The following averaging periods were used for each pollutant:

NO _x	Annual
CO	1-Hour, 8-Hour
PM ₁₀	24-Hour, Annual

Source Groups

For determination of significant impacts from the proposed facility a source group containing the proposed new LEA sources was employed (NEW_HPU). For PSD PM₁₀ Increment consumption modeling, the proposed LEA sources at Virginia and Hibbing were modeled, plus increment consumers at Hibbing Taconite, Potlatch-Cook, and the Laskin Energy Center.

All sources have been relocated to NAD83 coordinates by comparing coordinate locations with digital orthophotos obtained from the Minnesota DNR Data Deli.

Emission Rates

Maximum potential emissions from the new LEA facility were used for both PSD Increment and NAAQS compliance model runs. For existing LEA sources, emissions were also modeled at potential emission rates for purposes of PSD Increment and NAAQS analysis. Sources outside of LEA were included at emission rates provided in the MPCA source inventories for PSD Increment and NAAQS.

Merging of Stacks

Merged stacks are not employed in the modeling of LEA sources. Boilers 1A and 2A stacks have been replaced with a common stack that was included in the analyses. Consistent with MPCA modeling guidance, a few distant sources may be modeled such that all facility emissions are assumed to pass through a single stack, but where possible, this practice has been avoided. Stack parameters are taken from previous modeling runs identified by MPCA as a source of data.

Building Downwash Implementation

The ISC models include algorithms to model the effects of buildings downwash on emissions from nearby or adjacent point sources. The U.S. EPA Building Profile Input Program (BPIP-PRIME) version 04274 was employed to determine building downwash parameters for the LEA sources. The BPIP model is included within the BEEST dispersion modeling package assembled by Bowman Engineering of Asheville, North Carolina.

Per guidance from MPCA, building downwash calculations should be undertaken for any sources located within 3 kilometers of the Hibbing Public Utilities Site.

However, none of the modeled sources lie within 3 kilometers, so building downwash is only implemented for the Hibbing Public Utility – LEA site.

Meteorological Data

The meteorological data uses the most recent five years of available National Weather Service (NWS) meteorological data from the nearest site, the Hibbing surface and St. Cloud upper air observations. The information was obtained from the MPCA website and includes the years 1972-1976.

Receptor Grid Development

Significant impact modeling utilizes a large grid, extending out to 10,000 meters. Smaller grids that encompass the significant impact area of each pollutant are then used. The receptor grid employed for PM₁₀ increment and NAAQS analysis is designed to exceed the PM₁₀ worst-case significant impact radius, which extends to a maximum distance of 0.4 km (see Table 5). The grid utilizes 10 meter spacing on the fenceline, 25 meter spacing to 250 meters, 50 meter spacing to 500 meters, and 100 meter spacing to 1000 meters, and 200 meter spacing to 2000 meters. Receptors were located on the Hibbing Public Utilities property even if they fell on buildings.

Other Hibbing Sources

Other Hibbing Public Utilities sources included in the NAAQS modeling are the two Hibbing High School boilers and the HPU cooling towers. The cooling towers were only included in the PM₁₀ analysis.

Emergency Generators

A 1.5 MW emergency generator is proposed for the LEA Hibbing site. The generator is provided solely for emergency use and will not be operated when other LEA and Hibbing Public Utility sources (boilers) are operating. The generator is therefore not included in modeling of ambient air concentrations for prediction of PSD Increment or NAAQS standard compliance.

Model Updates

As with nearly every construction project, the biomass facilities could not be built exactly as they were planned and permitted. To verify that the facility as it was built still meets the ambient air quality requirements, the models were rerun incorporating the changes. The building coordinates for the wood storage building, the wood boiler building, the electrostatic precipitator, the addition of wood receiving operations to the west end of the coal storage building, the water softener building, the wood ash silo and the coal ash silo were updated to represent the buildings as they are being constructed today. The stack coordinates for the wood boiler stack (SV007), the truck unloading stack (SV008), storage bin vents #1 and #2 (SV009, SV010), the conveyor transfer stack (SV011), the metering bin feed stack (SV012) and the wood ash silo stack (SV014) were updated to the actual instead of planned locations. The base elevations were set to 1489.48 feet for all sources and buildings in the model at the facility site.

The source characteristics were updated as outlined in Table 1. The exit velocity for the wood ash silo was adjusted to zero feet per second because the stack is horizontal.

Table 1
Source Characteristics Updated from Initial Application

	Flow Rate	Stack Diameter	Stack Height	Exit Velocity	Temperature	Emission Rate
SV004	X			X	X	X
SV007			X			
SV008	X	X		X		
SV009	X	X		X		
SV010	X	X		X		
SV011	X	X	X	X		
SV012	X	X	X	X		
SV014		X	X	X		

1.1.1 Model Results

Modeling was performed in accordance with MPCA PSD guidance and follows the protocols previously used in the LEA permitting process. A preliminary analysis was conducted to determine whether the proposed wood-fired electric generation facility created a significant impact on ambient air quality. This analysis was conducted for CO, NO_x and PM₁₀, pollutants for which the project represents a major increase in emissions subject to PSD. The preliminary analysis determines whether in-depth modeling of PSD increment consumption and NAAQS compliance must be conducted. When a source impact is less than the significant impact threshold, the source is said to be unable to cause or contribute to an exceedence of ambient air quality standards, and the analysis goes no further. When the source is shown to have a significant impact on ambient air quality, the full impact analysis must be conducted to assess whether PSD growth increments or NAAQS might be exceeded. The discussion below provides a summary of the dispersion modeling findings for the proposed LEA wood-fired electric generation facility.

1.1.2 Significant Impact Area Determination

Nitrogen Dioxide

- Annual Averaging Period**

Table 2 summarizes the model-predicted NO_x concentrations for the annual averaging periods. We have applied the EPA Tier II analysis procedure, by multiplying NO_x concentrations by 75 percent to predict NO₂ concentrations for comparison with significant impact thresholds. In all five years, the NO₂ impact from the new facility is not predicted to exceed the significant impact threshold of 1 microgram per cubic meter. Full impact modeling for NO_x is therefore not required for PSD Increment and NAAQS compliance based upon the annual averaging period.

Table 2
ISC-PRIME Results for Nitrogen Dioxide Impacts
Annual Averaging Period

Year	High Concentration (ug/m3)	NO ₂ Concentration (ug/m3)	Receptor X	Receptor Y	Impact Radius (km)
1972	0.58656	0.43992	505250	5252550	-
1973	0.49082	0.36812	505250	5252650	-
1974	0.59181	0.44386	505600	5251600	-
1975	0.67191	0.50393	505250	5252600	-
1976	0.74557	0.55918	505600	5251600	-

Carbon Monoxide

- 1-Hour Averaging Period**

Table 3 summarizes the model-predicted CO concentrations for the 1-hour averaging period. In all five years, the impact from the new facility is not predicted to exceed the significant impact threshold of 2,000 micrograms per cubic meter. Full impact modeling for CO is therefore not required for NAAQS compliance based upon the 1-hour averaging period.

Table 3
ISC-PRIME Results for Carbon Monoxide Impacts
1-Hour Averaging Period

Year	Highest-High Concentration (ug/m3)	Period*	Receptor X	Receptor Y	Impact Radius (km)
1972	107.02035	01/07/22	502500	5256000	-
1973	108.67813	11/11/18	503000	5256500	-
1974	114.40827	06/27/01	502500	5256000	-
1975	107.87570	11/09/05	503000	5256500	-
1976	104.56693	05/10/11	505250	5252700	-

*period notation refers to the time period during which the high value occurred (day/mo/hr)

- 8-Hour Averaging Period**

Table 4 summarizes the model-predicted CO concentrations for the 8-hour averaging period. In all five years, the impact from the new facility is not predicted to exceed the significant impact threshold of 500 micrograms per cubic meter. Full impact modeling for CO is therefore not required for NAAQS compliance based upon the 8-hour averaging period.

Table 4
ISC-PRIME Results for Carbon Monoxide Impacts
8-Hour Averaging Period

Year	Highest-High Concentration (ug/m3)	Period*	Receptor X	Receptor Y	Impact Radius (km)
1972	66.29459	09/21/16	505300	5252700	-
1973	50.62573	09/22/08	505300	5252800	-
1974	61.43943	11/20/08	505250	5252750	-
1975	57.25422	10/08/24	504500	5253500	-
1976	58.97244	11/18/16	505225	5252650	-

*period notation refers to the time period during which the high value occurred (day/mo/hr)

Particulate Matter (PM₁₀)

- Annual Averaging Period**

Table 5 summarizes the model-predicted PM₁₀ concentrations for the annual averaging period. In all five years, the impact from the new facility is predicted to exceed the significant impact threshold of 1 microgram per cubic meter. Figure 1 shows the maximum impact radius of 0.2 km in 1976. Full impact modeling must therefore be conducted for PM₁₀ PSD Increment and NAAQS compliance for the annual averaging period.

Table 5
ISC-PRIME Results for PM10 Impacts
Annual Averaging Period

Year	High Concentration (ug/m3)	Receptor X	Receptor Y	Impact Radius (km)
1972	2.59343	504975	5252875	0.1
1973	2.42355	504975	5253000	0.1
1974	2.57547	504975	5252875	0.1
1975	2.39236	504975	5252875	0.1
1976	2.97311	504975	5252875	0.2

Figure 1
0.2 km Radius of Impact for 1976
PM10 Annual Averaging Period

• **24-Hour Averaging Period**

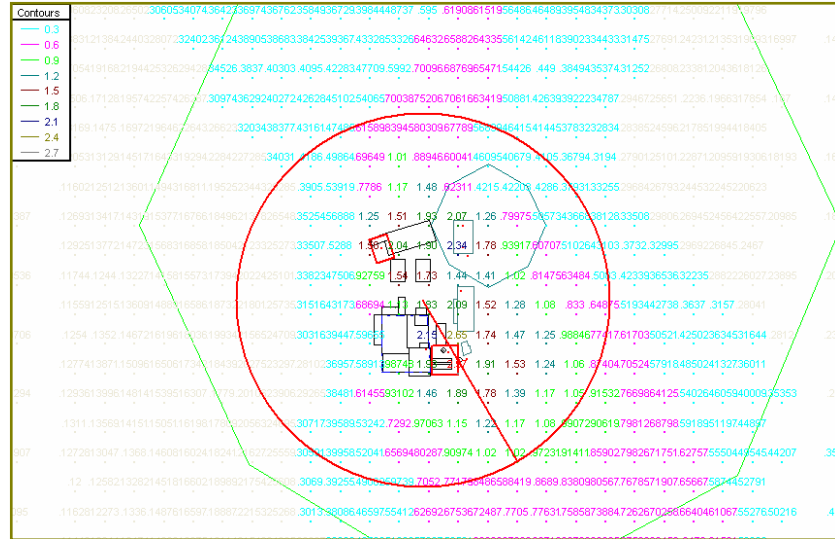


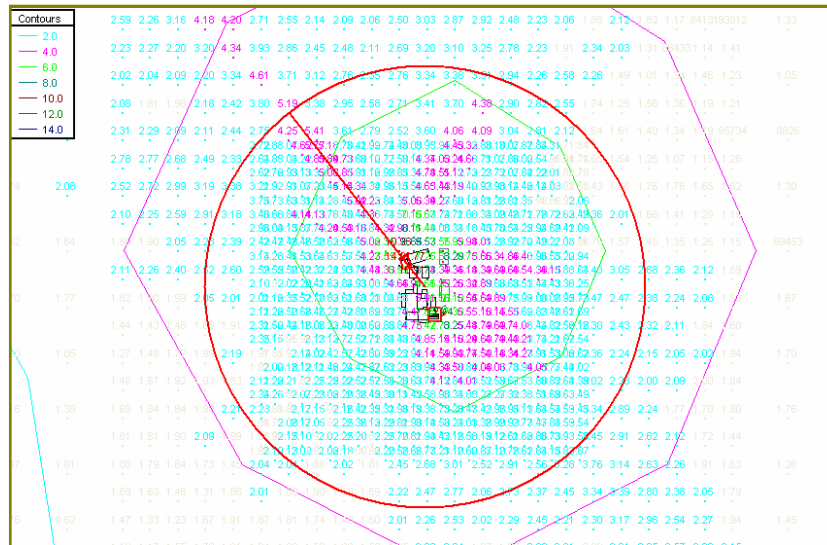
Table 6 summarizes the model-predicted PM₁₀ concentrations and Figure 35 shows the maximum impact radius for the 24-hour averaging period. The impact from the new facility is predicted to exceed the significant impact threshold of 5 micrograms per cubic meter. Full impact modeling must therefore be conducted for PM₁₀ PSD Increment and NAAQS compliance for the 24-hour averaging period. The maximum impact radius occurs in 1975 as shown in Figure 2.

Table 6
ISC-PRIME Results for PM10 Impacts
24-Hour Averaging Period

Year	Highest-High Concentration (ug/m3)	Period*	Receptor X	Receptor Y	Impact Radius (km)
1972	13.40152	03/19/24	504900	5253000	0.1
1973	18.99418	03/19/24	504900	5252975	0.2
1974	12.02802	04/18/24	504900	5252975	0.1
1975	14.90810	04/24/24	504900	5252975	0.4
1976	11.32026	04/20/24	504900	5252975	0.2

*period notation refers to the time period during which the high value occurred (day/mo/hr)

Figure 2
0.4 km Radius of Impact for 1975
PM10 24-Hour Averaging Period



1.1.3 PSD Increment Consumption – All Increment-Consuming Sources

Particulate Matter (PM₁₀)

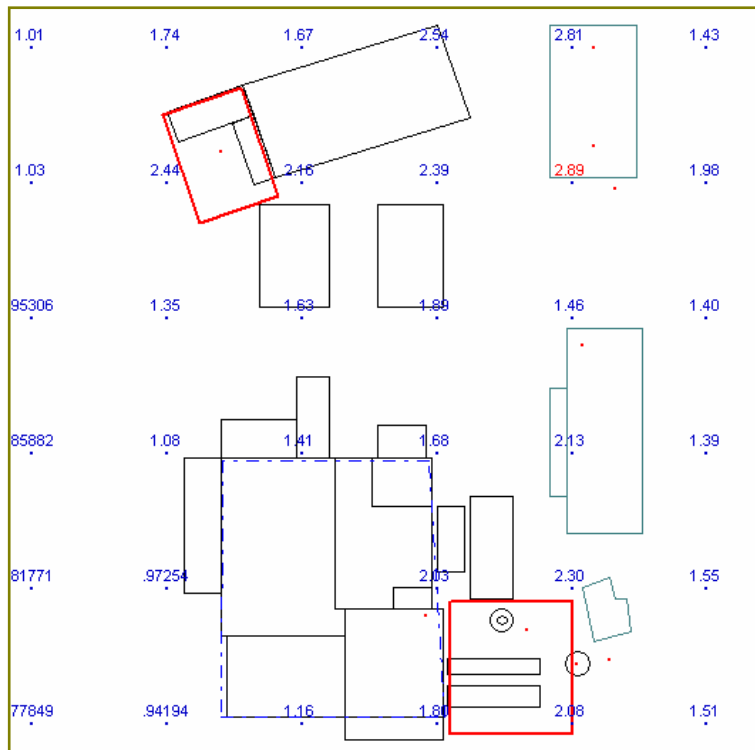
- Annual Averaging Period**

Table 7 summarizes the model-predicted PM₁₀ concentrations for the annual averaging period for all increment-consuming sources. In all five years, predicted increment consumption is less than the Class II PSD Increment standard of 17 micrograms per cubic meter. Figure 3 shows the location of the high concentration in 1973.

Table 7
Summary of PM10 PSD Increment Consumption (All Sources)
Annual Averaging Period

Year	High Concentration (ug/m3)	Receptor X	Receptor Y
1972	2.79936	504975	5252975
1973	2.89164	504975	5252975
1974	2.85176	504975	5252975
1975	2.62970	504975	5252975
1976	2.76159	504975	5252975

Figure 3
Location of High Concentration 1973
PM10 Annual Averaging Period



- **24-Hour Averaging Period**

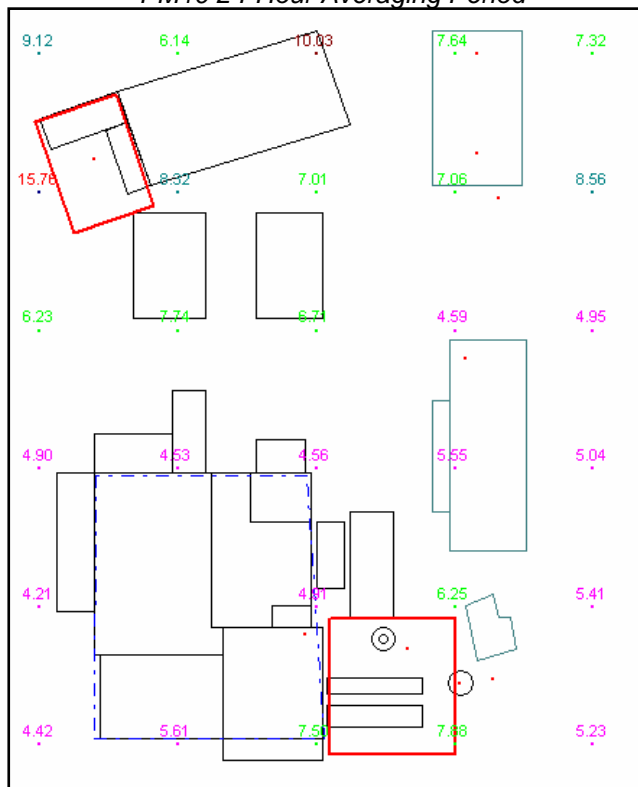
Table 8 summarizes the model-predicted PM₁₀ concentrations for the 24-hour averaging period for all increment-consuming sources. The location of the highest-high concentration in 1973 is shown in Figure 4. In all five years, predicted increment consumption is less than the Class II PSD Increment standard of 30 micrograms per cubic meter.

Table 8
Summary of PM10 PSD Increment Consumption (All Sources)
24-Hour Averaging Period – High Second High

Year	Highest-High Concentration (ug/m3)	Period*	Receptor X	Receptor Y
1972	12.51319	03/23/24	504900	5252975
1973	15.75821	03/20/24	504900	5252975
1974	11.56511	04/12/24	504900	5252975
1975	14.20244	04/04/24	504900	5252975
1976	11.35878	04/20/24	504900	5252975

*period notation refers to the time period during which the high value occurred (day/mo/hr)

Figure 4
Location of High Concentration 1973
PM₁₀ 24-Hour Averaging Period



1.1.4 NAAQS Compliance Determination

Particulate Matter (PM₁₀)

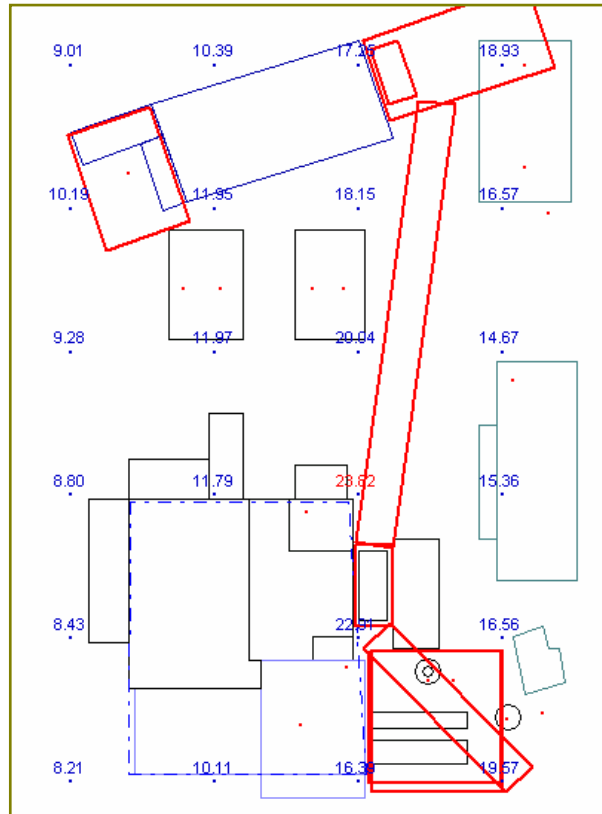
- Annual Averaging Period**

Table 9 summarizes the model-predicted PM₁₀ concentrations for the annual averaging period for NAAQS compliance by all identified point sources within 50 kilometers.

Table 9
Summary of PM₁₀ NAAQS Compliance (All Sources)
Annual Averaging Period

Year	High Concentration (ug/m3)	Receptor X	Receptor Y
1972	23.30328	504950	5252925
1973	23.82371	504950	5252925
1974	22.42156	504950	5252900
1975	20.75659	504950	5252925
1976	22.99289	504975	5252875

Figure 5
Location of High Concentration 1973
PM₁₀ Annual Averaging Period



- **Background Concentrations**

Background concentrations were provided by MPCA. The MPCA-specified background concentration for annual PM₁₀ is 23 micrograms per cubic meter. When added to the highest concentration from the NAAQS model, a value of 46.82371 micrograms per cubic meter is predicted, below the NAAQS standard of 50 micrograms per cubic meter.

- **24-Hour Averaging Period**

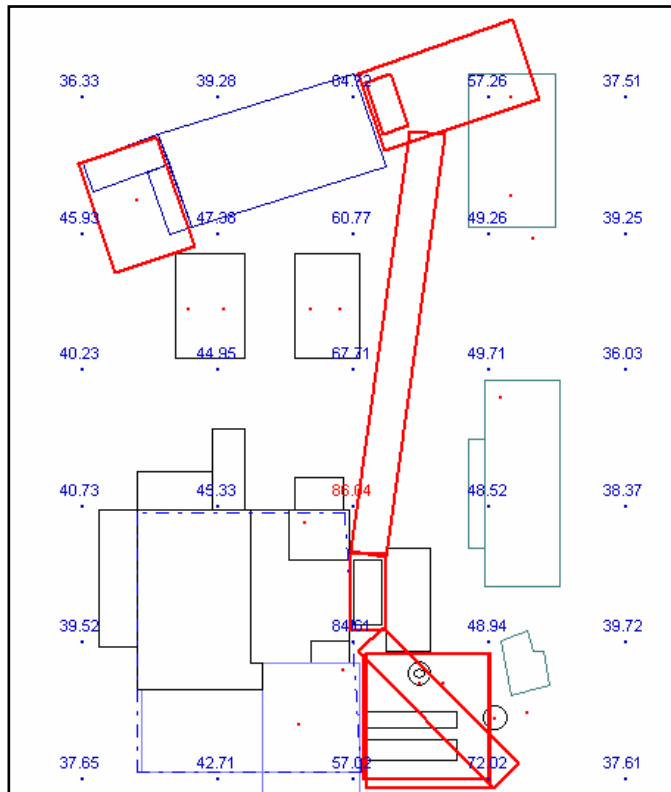
Table 10 summarizes the model-predicted PM₁₀ concentrations for the 24-hour averaging period for NAAQS compliance by all identified point sources within approximately 50 kilometers. Figure 6 shows the location of the high sixth-high concentration over 5 years.

Table 10
Summary of PM10 NAAQS Compliance (All Sources)
24-Hour Averaging Period – High Sixth High/5 Years

Year	Highest-High Concentration (ug/m3)	Period*	Receptor X	Receptor Y
1976	86.04184	03/20/24	504950	5252925

*period notation refers to the time period during which the high value occurred (day/mo/hr)

Figure 6
Location of High Sixth-High Concentration 1976
PM10 24-Hour Averaging Period



- Background Concentrations**

Background concentration was provided by MPCA. The MPCA-specified background concentration for 24-hour PM10 is 37 micrograms per cubic meter. When added to the highest concentration from the NAAQS model, a value of 123.04184 micrograms per cubic meter is predicted, below the NAAQS standard of 150 micrograms per cubic meter.