

AIR EMISSION PERMIT NO. 04900005- 001

IS ISSUED TO

XCEL ENERGY

NSP dba Xcel Energy - Red Wing
801 East 5th Street
Red Wing, Goodhue County, MN 55066

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
Total Facility Operating Permit

Application Date
September 1995
Updated February 10, 1999, and December 5, 2002

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

Permit Type: Federal; Pt 70/Major for NSR

Issue Date:

Expiration:

All Title I Conditions do not expire.

Michael (Mike) J. Tibbetts
Major Facility Section Manager
Majors and Remediation Division

for Sheryl A. Corrigan
Commissioner
Minnesota Pollution Control Agency

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

Appendices: Attached and Referenced in Table A

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 facility covered by the draft permit, Air Emissions Permit No. 04900005-001, Red Wing Plant is an electric power generating station located along the Mississippi River in Red Wing Minnesota. The Red Wing plant is rated at 25 Megawatts (MW) and has two boilers that primarily burn Refuse Derived Fuel (RDF). The RDF burned at this facility is processed under contract with the Elk River Resource Recover Facility in Elk River, Minnesota; and the Ramsey/Washington Resource Recovery Facility in Newport, Minnesota.

Energy is produced through combustion of RDF in two traveling grate boilers. The units are identified in the permit as emissions units 1 and 2 (EU 001 and EU 002). The units are 180 Million Btu/hr each, which equates 16.4 tons of RDF per hour (at an assumed heat content of 5,500 Btu/lb.). The combustors can also burn natural gas. The boilers were installed in 1947. The Permittee was issued a permit to convert to burn RDF in 1984.

Each boiler exhausts through separate pollution control equipment, dry lime injection for the control of acid gases and a baghouse for the control of Particulate Matter (PM) and a 187-ft. tall stack. Exhaust gases from each boiler are continuously monitored for Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), opacity, and Oxygen (O₂). A number of operating parameters, including baghouse inlet temperature, and steam flow rate, are also monitored continuously.

Hot water for internal use when the EU 001 and EU 002 are down is provided by a natural gas-fired boiler.

Ash produced in the course of waste combustion is stored in an enclosed area at the facility. The ash is transported using covered trucks to the Red Wing Ash Landfill (permit number SW-307). Other sources of PM emissions are the lime storage silo and RDF receiving building.

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

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
OPERATIONAL LIMITS	hdr
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
Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Permittee will operate the facility in accordance with the solid waste management requirements as set forth in Minn. R. 7011.1245 items A to H. Plans required shall identify those required portions of the plan which are not applicable.	Minn. R. 7011.1245(A)-(H)
Fugitive Dust Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
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
PLANS	hdr
INDUSTRIAL SOLID WASTE MANAGEMENT PLAN: Permittee shall prepare and maintain a plan for management of industrial solid waste in accordance with Minn. R. 7035.2535, subp. 5, items A and B. The plan shall include the contents listed in Minn. R. 7011.1250, subp. 2. Permittee shall modify the industrial waste management plan whenever the management practices or solid waste identified in the plan have changed. Permittee shall submit the plan and amended plan to the commissioner for approval. This is a state only requirement.	Minn. R. 7011.1250, subp. 1 Minn. R. 7011.1250, subp. 3
Ash Toxicity: Abide by a plan to reduce the level of toxic contaminants in ash, consistent with Minn. R. 7007.0501, subp. 6(A).	Minn. R. 7007.0501, subp. 6
Abide by a plan for the disposal and/or utilization of ash and quench water consistent with Minn. R. 7007.0501, subp. 7.	Minn. R. 7007.0501, subp. 7
Abide by the industrial waste management plan prepared in accordance with Minn. R. 7011.1250. This is a state only requirement.	Minn. R. 7007.0801, subp. 2(E)
Prepare and keep the following plans with the Operating Manual. A. security requirements in part 7035.2535, subp. 3; B. general inspection requirements in part 7035.2535, subp. 4; C. household hazardous waste management requirements of part 7035.2535, subp. 6, D. emergency preparedness and prevention plans and emergency procedures shall be prepared in accordance with parts 7035.2595 and 7035.2605. E. contingency action plans in part 7035.2615; F. closure plans and procedures in part 7035.2625; G. solid waste transfer facility requirements as required in Minn. R. 7035.2865; and H. infectious waste management plan (if Permittee chooses to accept infectious waste), in accordance with Minn. R. 7035.9100 to 7035.9150. I. a plan for handling waste that has not been processed into refuse derived fuel (RDF). Plans shall be prepared within 90 days of permit issuance if not completed on the date of permit issuance.	Minn. R. 7011.1245(A)-(H) Minn. R. 7007.0800, subp. 2
Provide a waste composition study (conducted on the waste stream from which the RDF is produced) every five years as described in Minn. R. 7007.0501, subp. 2(A). The Waste Composition Study and Sample Analysis Report is due 45 days after the end of each five years starting 12/31/2002.	Minn. R. 7011.1270 (A)(6)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation. The Permittee will incorporate operation and maintenance requirements for the air pollution control equipment into the Operating Manual required under Minn. R. 7011.1275, subp. 3.	Minn. R. 7007.0800, subp. 14; and Minn. R. 7007.0800, subp. 16(J)
Ash Testing Plan: Submit ash testing plan and amendments to the plan to the Regional Environmental Management, Metro Region, Regular Waste Management and Wastewater Sector Unit for approval. The plan must contain the information in Minn. R. 7035.2910, subp. 6(A) - (H). This is a state only requirement.	Minn. R. 7007.0801, subp. 2(D); Minn. R. 7035.2910, subp. 6
POLLUTION CONTROL EQUIPMENT	hdr
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)
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
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
TESTING REQUIREMENTS	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, and/or B.	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
Ash Testing: Conduct ash sampling at least quarterly in accordance with Minn. R. 7035.2910 to form an annual composite sample. The permittee shall analyze the annual composite sample in accordance with Minn. R. 7035.2910, subp. 4, item A, tables 1 and 2. This is a state only requirement.	Minn. R. 7035.2910, subp. 3 Minn. R. 7000.7000 MSW Ash Combustor Variance of October 1996
MONITORING REQUIREMENTS	hdr
Monitoring Equipment: Install or make needed repairs to all 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)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

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, and/ or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Permittee shall maintain records adequate to document compliance at the stationary source, including at a minimum: (1) the date, place, and time of sampling or measurement; (2) the date or dates the analyses were performed; (3) the company or entity that performed the analyses; (4) the analytical techniques or methods used; (5) the results of such analyses; and (6) the operating conditions existing at the time of sampling or measurement	Minn. R. 7007.0800, subp. 5(A)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
REPORTING/MISCELLANEOUS	hdr
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
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)
Insignificant Activities: Comply with the conditions set forth in Appendix III of Additional Appendix Materials of this Permit.	Minn. R. 7007.0800, subp. 2
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an 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: 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)
Ash Testing Report: Submit an annual ash testing report to the Commissioner by March 15 of each year. The report must contain at a minimum the information in Minn. R. 7035.2910, subp. 10, items A - F. This is a state only requirement.	Minn. R. 7035.2910, subp. 10
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Subject Item: GP 001 Waste Combustors**Associated Items:** EU 001 Boiler 1

EU 002 Boiler 2

What to do	Why to do it
The requirements of this section of this permit apply to EU 001 and EU 002 and the associated monitors, control equipment, and stacks individually unless explicitly stated otherwise.	hdr
OPERATIONAL LIMITS/REQUIREMENTS	hdr
Permittee shall comply with Minn. R. 7011.1201 to 7011.1290.	Minn. R. 7011.1215, subp. 1
EMISSION LIMITS	hdr
<p>Applicability of Standards: the standards of Minn. R. 7011.1227, 7011.1228, and 7011.1240, subps. 2 and 5 apply at all times when RDF is being continuously burned. The standards do not apply, up to a maximum of three hours, during periods of start-up, shutdown or malfunction.</p> <p>Fugitive emissions standards applicable to the ash conveying system do not apply during periods of maintenance and repair of the ash conveying system.</p> <p>The standards of Minn. R. 7011.0510 apply at all times when operating on permitted fuels other than RDF.</p>	<p>Minn. R. 7011.1215, subp. 4</p> <p>Minn. R. 7011.0505, subp. 1</p>
<p>Applicability of Standards: (continued)</p> <p>For the purposes of determining when the standards of Minn. R. 7011.1227, 7011.1228, 7011.1240, and 7011.0510 apply during a fuel switch from RDF to another permitted fuel, the Permittee shall determine the grate distance traveled after the RDF feed has stopped as follows:</p> <ul style="list-style-type: none"> - continuously monitor and record the grate speed after RDF feed has stopped, until the fuel switch from RDF is complete - calculate, at least once per minute, the distance traveled since RDF feed stopped - sum the calculated distances <p>When the summed distance traveled after the RDF feed has stopped is equal to the furnace depth multiplied by a safety factor of 1.1, the ash bed will be considered cleared of the traveling grate and the fuel switch from RDF will be considered complete.</p>	<p>Minn. R. 7011.1215, subp. 4</p> <p>Minn. R. 7011.0505, subp. 1</p> <p>(continued)</p>
Applicability of Standards: Permittee shall not cause to be emitted into the atmosphere when combusting RDF gases with concentrations in excess of the standards of performance shown in parts 7011.1227, 7011.1228. These limits apply to EU 001 and EU 002 individually unless an average limit over both units is explicitly stated. Emissions (except for opacity) shall be calculated under standard conditions corrected to seven percent oxygen on a dry volume basis.	Minn. R. 7011.1225, subp. 1(A)
Permittee shall not cause to be emitted into the atmosphere visible emissions of combustion ash from an ash conveying system, including conveyor transfer points, in excess of five percent of the observation period (i.e., 9 minutes per three-hour period), as determined by Code of Federal Regulations, title 40, part 60, Appendix A, Method 22, as amended. This limit does not apply to visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.	Minn. R. 7011.1225, subp. 1(B)
Front-half Particulate Matter: less than or equal to 0.012 grains/dry standard cubic foot , front-half.	Minn. R. 7011.1227, Table 1, Minn. R. 7011.1225, subp. 1;
Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot , total.	Minn. R. 7011.1227, Table 1; Minn. R. 7011.1225, subp. 1;
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 10 percent opacity	Minn. R. 7011.1227, Table 1;
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Sulfur Dioxide: less than or equal to 29 parts per million using 24-hour Geometric Average or 75 percent reduction of sulfur dioxide, which ever is less stringent.	Minn. R. 7011.1227, table 1
Carbon Monoxide: less than or equal to 200 parts per million using 24-hour Block Average .	Minn. R. 7011.1227, Table 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Nitrogen Oxides: less than or equal to 250 parts per million using 24-hour Block Average for each individual unit or less than or equal to 230 ppmv when averaged over all combustor units.	Minn. R. 7011.1228, Table A; Minn. R. 7011.1228, Table B;
Nitrogen Oxides Emissions Averaging: Before permittee may implement emissions averaging to demonstrate compliance with the nitrogen oxides emission limit, the permittee shall identify units that are included in the nitrogen oxides emissions averaging plan in either 1) the compliance report required by Minn. R. 7017.2035 that contains the results of the units' initial performance tests required by Minn. R. 7011.1270, item A, subitem (1); or 2) in the annual report required in part 7011.1285, as applicable prior to implementing the averaging plan. The units being included in the averaging plan may be redesignated every calendar year. Partial year averaging is allowable upon written commissioner approval. Average must be calculated in accordance with 40 CFR 60.33b(d)(1)	Minn. R. 7011.1228
Lead: less than or equal to 440 micrograms/DSCM .	Minn. R. 7011.1227, Table 1
Muni Waste Combust Organics: less than or equal to 30 nanograms/DSCM measured as Total PCDD/PCDF.	Minn. R. 7011.1227, Table 1
Cadmium compounds: less than or equal to 40 micrograms/DSCM measured as cadmium.	Minn. R. 7011.1227, Table 1
Hydrochloric acid: less than or equal to 29 parts per million ; or 95% control, whichever is less stringent.	Minn. R. 7011.1227, Table 1
Mercury: less than or equal to 50 micrograms/DSCM ; or 85% removal (short term), whichever is less stringent.	Minn. R. 7011.1227, Table 1
Mercury: less than or equal to 30 micrograms/DSCM ; or 85% removal (long-term), whichever is less stringent.	Minn. R. 7011.1227, Table 1
OPERATIONAL LIMITS	hdr
For purposes of determining when the standards Minn. of R. 7011.1227, 7011.1228, and 7011.1240, subps. 2 and 5 or Minn. R. 7011.0510 apply, during a fuel switch from RDF to another permitted fuel and vice versa, the Permittee shall determine the grate travel distance as follows: - Continuously monitor and record the grate speed - Calculate, at least once per minute, the distance traveled - Sum the calculated distances.	Minn. R. 7007.0800, subp. 2
Start-up on Waste Prohibited: During start-up from a cold furnace, use natural gas to achieve combustion chamber operating temperature.	Minn. R. 7011.1240. subp. 3
Auxiliary Fuel Use: Use natural gas to warm the combustion and pollution control devices and maintain good combustion conditions in the combustion chamber from the time the RDF feed has been discontinued until the combustion chamber is clear of combustible material or active combustion ceases.	Minn. R. 7007.0800, subp. 2
Allowed and Prohibited Fuels: The waste combustor may burn natural gas, wood, used oil generated on site, RDF as defined in Minn. Stat. 115A.03, subp. 21, except as noted elsewhere in Table A. Used oil shall be burned at a rate no greater than 180 gallons per hour. Used oil means on-specification oil defined in Minn. R. 7045.0020, subp. 60a and sorbents that hold the used oil. Permittee shall not combust yard waste or tires.	Minn. R. 7011.1220, subp.2; Minn. R. 7007.0800, subp. 2
Facility Operation: Properly maintain and operate air pollution control equipment at all times when the waste combustor is in operation and combusting RDF. Operation of the dry lime injection systems (CE 007 and CE 008) is not required when the standards of Minn. R. 7011.0510 apply. By-pass of the particulate matter pollution control equipment (CE 005 and CE 006) is allowed only during periods of warm-up while combusting natural gas.	Minn. R. 7007.0800, subp. 16(J) Minn. R. 7011.1240, subp. 7
QA Plan required: Develop and implement a written quality assurance plan which covers each CEMS and COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1210, subp. 1.	Minn. R. 7017.1210 Minn. R. 7017.1170
AVERAGING PERIODS	hdr
Averaging Periods: For emission limits or operational limits which are monitored continuously the following averaging periods shall be used: A) for particulate matter control device inlet temperature monitoring, four-hour arithmetic block averages calculated from four consecutive one-hour arithmetic averages. B) for unit load, a four-hour arithmetic block average, the four-hour arithmetic block averages shall be calculated from four continuous one-hour arithmetic averages. C) For opacity, a 6-minute average calculated using 36 or more data points equally spaced over a 6-minute period.	Minn. R. 7011.1260, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

<p>Averaging Periods (continued)</p> <p>D) for SO₂, a geometric average of the 1-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight.</p> <p>E) for NO_x, an arithmetic average of the 1-hour arithmetic average emission rates concentration during each 24-hour daily period measured from midnight to midnight.</p> <p>F) for carbon monoxide, an arithmetic average of the 1-hour arithmetic average emission rates concentration during each 24-hour daily period measured from midnight to midnight.</p> <p>At least 4 data points equally spaced in time shall be used to calculate each 1-hour arithmetic average. Each 1-hour average shall be corrected to 7 % O₂ on an hourly basis using the one-hour arithmetic average of the O₂ or CO₂ continuous emissions monitoring system;</p>	Minn. R. 7011.1260, subp. 4 (continued)
OPERATING TRAINING & CERTIFICATION	hdr
<p>Develop and maintain the Operating Manual in accordance with Minn. R. 7011.1275, subp. 3, items A through O; Update the manual following each performance test to include operational changes resulting from emissions performance testing results. Include the revision dates within the Operating Manual; Store the Operating Manual in a location easily accessed by staff.</p>	Minn. R. 7011.1275, subp. 3;
<p>Training Program: Implement a training program, based on the Operating Manual, designed to maintain compliance with this permit and Minn. Rules. Individual training must be specific to the position held. The permittee will: Implement the required training; Document the nature and length of training for each individual; Report the names of those who have been trained in the Quarterly Report following training.</p>	Minn. R. 7011.1275; Minn. R. 7007.0800, subp. 2
<p>Training Program: Persons with job-related activities affecting air emission must: Initially review the operating manual prior to assumption of any job-related activities affecting air emissions, and; Annually review the operating manual.</p> <p>Persons with newly-assigned job-related activities affecting air emission must review the portions of the operating manual relevant to the newly-assigned position before assumption of the new job-related activities.</p>	Minn. R. 7011.1275, subp. 1
<p>Training Program: Persons without waste combustor or boiler operation experience must work under the direct supervision of a certified operator or a certified operator's designee for 40 hours before assuming job-related activities affecting air emissions.</p>	Minn. R. 7011.1275, subp. 1(C)
<p>Training Program: Waste combustor personnel who have responsibilities which affect the operation of the waste combustor must be trained in the operation of the facility. These personnel include, but are not limited to, chief facility operators, shift supervisors, operator supervisors, control room personnel, ash handlers, maintenance personnel, and load handlers. The permittee will: Identify all people described above who must be trained, and include a separate page for each of these people in the Operating Record; Report the names of those who have been trained and the type of training received in the Annual Report following training as required under Minn. R. 7011.1285, subp. 2.</p>	Minn. R. 7011.1275, subp. 1; Minn. R. 7011.1275, subp. 2; Minn. R. 7011.1275, subp. 4
<p>Certified Operator: The permittee shall:</p> <p>1) Maintain at the facility for 5 years a record of the names of all certified personnel. This record shall contain the exam dates, the content of the exam, the full name of the certified individual, the examiner's signature and the certification statement in Minn. R. 7011.1284, subp. 3.</p> <p>2) Maintain at the facility for 5 years a record of the names of all personnel who have obtained provisional and/or full certification by ASME.</p> <p>The permittee shall allow the commissioner to review all records related to the certification of operators including the facility's program for examination and certification of operators, the record required in Minn. R. 7011.1284, subp. 3, and the content and results of an individual's exam.</p>	Minn. R. 7011.1284, subp. 3; Minn. R. 7011.1284, subp. 3a
<p>Permittee shall allow the commissioner to review all records related to the certification of operators including the facility's program for examination and certification of operators, the record required in Minn. R. 7011.1284, subp. 3, the content of the examinations and the results on an individual's examination.</p>	Minn. R. 7011.1284, subp. 4
<p>Presence of certified operator. The person described in Minn. R. 7011.1240, subp. 1 shall be present at the waste combustor facility at all times when solid waste is being combusted. The certified operator shall meet the minimum requirements of Minn. R. 7011.1280, subp. 3(B) and 7011.1281.</p>	Minn. R. 7011.1240, subp. 1;
MONITORING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Continuous Monitoring: Permittee shall install, calibrate, maintain and operate, in accordance with Minn. R. 7011.1260, subp. 5, monitors that continuously read and record: a) unit load level as determined through steam flow measurement b) oxygen concentrations at each location where CO, SO ₂ and NO _x emissions are monitored. c) temperatures of the flue gas at the inlet of each particulate matter control device. d) flue gas opacity. e) grate speed	Minn. R. 7011.1260, subp. 2; Minn. R. 7011.1260, subp. 3; Minn. R. 7011.1272, subp. 3
Installation Notification: due 60 days before installing the COMS/CEMS. Install the CEMS according to the procedures in 40 CFR Appendix B.	Minn. R. 7017.1040, subp. 1;
CEMS QA/QC: The owner or operator of an affected facility shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 60, Appendix F, section 3, as amended.	Minn. R. 7011.1260, subp. 5(G)
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to 6 minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the 6 minute averaging period.	Minn. R. 7017.1200, subp. 1, 2, & 3;
CEMS/COMS Continuous Operation: CEMS/COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit startup, shutdown, or malfunction. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS/COMS must not be bypassed except in emergencies where failure to bypass the CEMS/COMS would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1
Monitoring data shall be obtained for at least 75 percent of the hours per day for 90 percent of the days per calendar quarter that the combustor is operating and combusting RDF.	Minn. R. 7011.1260, subp. 5(B)
CEMS/COMS Certification Test: due 90 days after first Excess Emissions Report. This requirement applies to any CEMS/COMS which has not previously been certified.	Minn. R. 7017.1060, subp. 1 and 2
CEMS/COMS Certification Test Plan: due 30 days before CEMS/COMS certification test.	Minn. R. 7017.1060, subp. 1 and 2
CEMS/COMS Certification Pretest Meeting: due 7 days before CEMS/COMS certification test.	Minn. R. 7017.1060, subp. 3
CEMS/COMS Certification Test Report: due 45 days after CEMS/COMS certification test.	Minn. R. 7017.1080, subp. 1, 2, and 4
CEMS/COMS Certification Test Report - Microfiche Copy: due 105 days after CEMS/COMS Certification Test. Permittee may submit report in CDROM format in lieu of microfiche.	Minn. R. 7017.1080, subp. 3
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily from each COMS according to the procedures listed in 40 CFR 60.13.	Minn. R. 7011.1260, subp. 5(E); Minn. R. 7017.1210, subp. 2
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures of 40 CFR 60.13. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS.	Minn. R. 7011.1260, subp. 5(E); Minn. R. 7017.1170, subp. 3
COMS Calibration Error Audit: due before end of each half-year starting 04/29/2002. Conduct audits at least 3 months apart but no greater than 8 months apart. Follow the procedures of 40 CFR 60, Appendix B, Performance Specification 1.	Minn. R. 7017.1210, subp. 3; Minn. R. 7007.0800, subp. 2
COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar quarter following COMS Calibration Error Audit.	Minn. R. 7017.1220
CEMS Cylinder Gas Audit (CGA): due before end of each calendar quarter starting 04/29/2002 except for quarters in which a RATA was performed. This requirement applies to each CEMS as well as each diluent monitor.	Minn. R. 7011.1260, subp. 5(G); Minn. R. 7007.0800, subp. 2
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Cylinder Gas Audit	Minn. R. 7011.1285, subp. 3(G); Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1180, subp. 1.
CEMS Relative Accuracy Test Audit (RATA): due before end of each year starting 04/29/2002. Follow the procedure in 40 CFR pt. 60, Appendix F. The RATA shall be conducted during the calendar quarter in which a cylinder gas audit (CGA) is not performed. This requirement applies to each CEMS individually.	Minn. R. 7011.1260, subp. 5(G); Minn. R. 7007.0800, subp. 2
Relative Accuracy Test Audit (RATA) Notification: Due 30 days before CEMS Relative Accuracy Test Audit (RATA)	Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1180, subp. 2.
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of the calendar quarter in which the Audit was performed	Minn. R. 7011.1285, subp. 3(G); Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1180, subp. 3.

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Recordkeeping: Maintain a file of all of the following CEMS and COMS information in a form suitable for inspection, on site, for a period of 5 years from the date of each record: each one-hour emission average recorded by the CEMS; each six-minute opacity average recorded by the COMS; monitor certification test reports; EERs; RATAs; CGAs; calibration error audit reports; reports of daily drift checks; log of adjustments made to the CEMS/COMS and maintenance performed on each CEMS/COMS; and an up-to-date monitor QA/QC plan.	Minn. R. 7017.1130
Recordkeeping: Permittee will maintain a record of continuously measured parameters as specified in Minn. R. 7011.1260, subp. 6.	Minn. R. 7011.1260, subp. 6; Minn. R. 7007.0800, subp. 2
Steam flow measurement method. The method contained in ASME Power Test Codes: Test Codes for Steam Generating Units, PTC 4.1 (1972), section 4, shall be used for calculating the steam flow required under Minn. R. 7011.1260, subpart 3, item A, subitem (2). The recommendations of Instruments and Apparatus: Measurement of Quantity of Materials, Interim Supplement 19.5 (1971), chapter 4, shall be followed for design, construction, installation, calibration, and use of nozzles and orifices, except that measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed. All signal conversion elements associated with steam flow measurements must be calibrated according to the manufacturer's instructions before each PCDD/PCDF test, and at least once per year. This annual calibration shall be recorded in the daily operating record as described in Minn. R. 7011.1285, subpart 2.	Minn. R. 7011.1265, subp. 4
Alternative continuous measuring methods in place of steam flow may be installed and operated, provided that the method continuously measures the waste combustor unit load, is equivalent to results obtained when using the method in Minn. R. 7011.1265, subp. 4, and the use of the method is approved by the commissioner.	Minn. R. 7011.1265, subp. 4a
TESTING REQUIREMENTS	hdr
Permittee shall use the performance test methods and procedures specified in Minn. R. 7017.2001 to 7017.2060 except as modified in Minn. R. 7011.1265. Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for hydrogen chloride is not a modification under Minn. R. 7007.0100, subpart 14.	Minn. R. 7011.1265, subp. 1
The Permittee shall determine the maximum demonstrated capacity of each unit during the initial performance test for PCDD/PCDF and each subsequent performance test during which compliance with the PCDD/PCDF emissions limit in Minn. R. 7011.1225 is achieved.	Minn. R. 7011.1265, subp. 7
Operation during performance testing. Permittee shall report to the commissioner the operating conditions including operating parameters of the air pollution control equipment, flue gas temperatures and air flow rates.	Minn. R. 7011.1265, subp. 6
Particulate matter control device temperature. Permittee shall determine and record the four-hour arithmetic average gas stream temperature as measured at the inlet to each particulate matter control device during the initial and each subsequent performance test for PCDD/PCDF demonstrating compliance with the PCDD/PCDF emission limit in Minn. R. 7011.1225.	Minn. R. 7011.1265, subp. 8
Exceedances of emission limits. If accurate and valid data results of a performance test demonstrate an exceedance of a standard of performance as described in Minn. R. 7011.1225 or in this air emission permit after normal start-up, Permittee shall undertake the actions in items A to D. A. The exceedance shall be reported to the commissioner as soon as reasonably possible giving consideration to matters of plant or worker safety, or access to communications and the applicable reporting provisions of Minn. R. 7007.0800, subpart 6, shall be met. B. Immediately undertake appropriate repairs or modifications to return the waste combustor to compliance as soon as possible.	Minn. Stat. 165.85, subd 3; and Minn. R. 7011.1265, subp. 11
Exceedances of emission limits (continued): C. Conduct additional performance test(s) or shut the waste combustor down. If the waste combustor cannot demonstrate compliance within 60 days of the report of initial exceedance, the waste combustor shall be shut down on the 61st day after the report of the exceedance. The performance test shall be conducted and the test report received within those 60 days.	Minn. Stat. 165.85, subd 3; and Minn. R. 7011.1265, subp. 11 (continued)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

<p>Exceedances of emission limits (continued):</p> <p>D. If the permittee cannot demonstrate compliance within 60 days of the report of the initial exceedance, the permittee may restart the waste combustor for the purposes of compliance testing, provided that at least a 10-day notification has been provided to the commissioner. The permittee is allowed to operate the waste combustor until the completion of the test, after which the waste combustor must be shut down. The waste combustor may be restarted only after the permittee receives notice from the commissioner that it has achieved compliance with the emissions standards or restarts for the purpose and duration of additional testing after further repair or operational changes.</p> <p>This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.</p>	<p>Minn. Stat. 165.85, subd 3; and Minn. R. 7011.1265, subp. 11 (continued)</p>
<p>Performance Test: due before end of each calendar year following Initial Performance Test to measure front-half PM, Total PM, Total PCDD/PCDF, Cd, HCl, Hg, and Pb. A year is defined as 12 months. The tests shall be conducted at an interval not to exceed 12 months between test dates.</p> <p>For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".</p> <p>If Permittee meets the criteria for decreased PCDD/PCDF testing, per Minn. R. 7011.1270, the Permittee shall submit a notification stating that testing will not be conducted that year. The basis for not testing must be stated. In addition, the notification shall specify the Total PCDD/PCDF results from the previous test. When the Permittee provides notification that a test will not be conducted because criteria are met for less frequent testing, the test plan, pre-test meeting, test report, and microfiche (or CDROM) copy of the test report requirements are waived for that yearly test</p>	<p>Minn. R. 7011.1270); Minn. R. 7017.2030, subp. 1 Minn. R. 7007.0800, subp. 2</p>
<p>Permittee shall conduct PCDD/PCDF performance tests as described below:</p> <p>If all PCDD/PCDF performance tests for all units for a two-year period indicate that PCDD/PCDF emissions are less than or equal to 15 ng/dscm corrected to seven percent oxygen from each unit, then Permittee may choose to test one unit for PCDD/PCDF once annually thereafter, but not more than 12 months following the previous performance test. Permittee may continue to test a different unit for PCDD/PCDF each year, in sequence (e.g. unit 1, unit 2, etc.). If any annual performance test demonstrates a PCDD/PCDF concentration greater than 15 ng/dscm corrected to seven percent oxygen, performance tests thereafter shall be conducted annually on all units and until all annual performance tests for all units for a two-year period indicate a PCDD/PCDF emission concentration less than or equal to 15 ng/dscm.</p>	<p>Minn. R. 7011.1270</p>
<p>Hg test frequency: The Permittee may choose to conduct Hg emissions testing every three months or every 12 months. If a test shows that an emission limit for mercury is exceeded, the commissioner shall require testing every three months thereafter until compliance with the standard is demonstrated.</p>	<p>Minn. R. 7011.1270 Minn. Stat. 116.85, subd. 3</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>Recordkeeping: record in the daily operating record the four-hour arithmetic average gas stream temperature as measured at the baghouse inlet during the most recent PCDD/PCDF performance test demonstrating compliance with the PCDD/PCDF emission limit in part 7011.1225.</p>	<p>Minn. R. 7011.1265, subp. 8; Minn. R. 7011.1240, subp. 2</p>
<p>Permittee shall maintain on site for five years after the report is generated, a paper copy of each quarterly report, initial compliance report, and performance test report required under Minn. R. 7011.1285, subparts 3, 5, and 6 respectively.</p>	<p>Minn. R. 7011.1285, subp. 1</p>
<p>The permittee shall maintain a file of all of the following CEMS or COMS information at the emission facility in a form suitable for inspection for at least five years from the date of each record:</p> <ul style="list-style-type: none"> A. each one-hour emission average recorded by the CEMS; B. each six-minute opacity average recorded by the COMS; C. monitor certification test reports; D. excess emissions reports; E. cylinder gas audit reports; F. calibration error audit reports; G. relative accuracy test audits; H. linearity check reports; I. results of daily calibration drift checks; J. log of adjustments made to the CEMS or COMS and maintenance performed on the CEMS or COMS; and K. all other monitoring system information required by an applicable compliance document. <p>The permittee shall also keep an updated copy of the facility's CEMS or COMS quality assurance plan on site.</p>	<p>Minn. R. 7017.1130</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

<p>Daily Operating Record: The Permittee shall maintain on-site daily records for the operation of the waste combustor. Daily records include such things as the operator log book, operator daily log sheets, trend records, CEMS records, and the daily operating report. The record shall contain:</p> <p>A. the calendar date;</p> <p>B. the hours of operation;</p> <p>B1. the time when RDF begins feeding and the unit load of the steam turbine at the time;</p> <p>B2. the time the RDF feed to the combustion chamber ceases;</p> <p>B3. the average grate speed during a fuel switch from RDF to another permitted fuel and vice versa.</p> <p>B4. the time at which the applicable emissions limits switch from Minn. R. 7011.1227, 7011.1228, and 7011.1240, subps. 2 and 5 to 7011.0510 due to a fuel switch from RDF to another permitted fuels and vice versa.</p>	<p>Minn. R. 7011.1285, subp. 2</p> <p>Minn. R. 7007.0800, subp. 2</p>
<p>Daily Operating Record (Continued)</p> <p>C. the weight of RDF combusted;</p> <p>C1. the number of gallons of waste oil burned;</p> <p>C2. the hour each quantity of waste oil was burned;</p> <p>C3. The source of the waste oil burned;</p> <p>D. the weight of RDF requiring disposal at a solid waste land disposal facility, including separated noncombustibles, excess RDF, and ash;</p> <p>E. the amount and description of industrial solid waste received each day, the generator's name, and the method of handling;</p> <p>F. the measurements and determination of emissions averages as required in part 7011.1260, subpart 6;</p> <p>G. results of performance tests conducted on waste combustor units as required in part 7011.1270;</p>	<p>Minn. R. 7011.1285, subp. 2 ;</p> <p>Minn. R. 7007.0800, subp. 2 (Continued)</p>
<p>Daily Operating Record (continued)</p> <p>H. instances of dumpstack use;</p> <p>H1. the time when PM control equipment by-pass begins;</p> <p>H2. the time when PM control bypass ceases;</p> <p>I. the names of persons who have completed initial review or subsequent annual review of the operating manual;</p> <p>J. the reasons for exceeding any of the average emission rates, percent reductions, or operating parameters specified under Minn. R. 7011.1260, subp. 6, item C, or the opacity limit and a description of corrective actions taken;</p> <p>K. reasons for not obtaining the minimum number of hours of sulfur dioxide or nitrogen oxides emissions or operational data (carbon monoxide emissions, steam flow, particulate matter control device temperature) and a description of corrective actions taken</p>	<p>Minn. R. 7011.1285, subp. 2</p> <p>Minn. R. 7007.0800, subp. 2 (Continued)</p>
<p>Daily Operating Record (continued)</p> <p>L. the date of the calibration of all signal conversion elements associated with steam flow monitoring as required in Minn. R. 7011.1265, subp. 4.</p> <p>M. if the permittee uses an additive to control Hg or PCDD/PCDF, the reasons for not maintaining the additive system operating parameter as determined in Minn. R. 7011.1272, subp. 2 and the corrective actions taken; and</p> <p>N. if the permittee uses an additive to control Hg or PCDD/PCDF, the reasons for not maintaining the additive mass feed rates as determined in Minn. R. 7011.1272, subp. 1 and the corrective actions taken.</p>	<p>Minn. R. 7011.1285, subp. 2</p> <p>Minn. R. 7007.0800, subp. 2 (Continued)</p>
<p>Recordkeeping: maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Archiving: Retain all continuously measured emission records for a minimum of five years. Regarding boiler load level monitoring, permanently retain current records of design, construction, installation, calibration, and use of nozzles and orifices. The permittee will store the above records in a reviewable format at the facility site and make them available upon request.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Shutdown or Breakdown Reporting Requirements. Permittee shall meet the requirements of part 7019.1000 and Minnesota Statutes, section 116.85. Notification to the commissioner for any shutdowns/breakdown is not required if RDF feed is planned to be taken off-line in conjunction with a shutdown.</p>	<p>Minn. R. 7011.1240, subp. 8</p>
<p>Recordkeeping: Permittee shall continuously read and record the temperatures of the flue gas at the inlet of the each particulate control device.</p>	<p>Minn. R. 7011.1260, subp. 2</p>
<p>REPORTING</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Reporting of Exceedances of Continuously Monitored Emissions: If accurate and valid data results collected from the sulfur dioxide, carbon monoxide and/or nitrogen oxide monitors exceed emission limits, the following procedures shall be followed. (1) Exceedance shall be reported to the commissioner as soon as reasonably possible. (2) Appropriate repairs or modifications to return the waste combustor to compliance must be commenced within 72 hours. If compliance cannot be achieved within 72 hours, then the waste combustor shall be shut down. If modifications to return the waste combustor to compliance require the amendment of this permit, the waste combustor shall shut down within 72 hours of the exceedance.	Minn. R. 7011.1260, subp. 7
Reporting of exceedances of continuously monitored emissions (continued): (3) When repairs or modifications have been completed, The permittee shall demonstrate to the commissioner that the waste combustor is in compliance. The waste combustor may be started up after the permittee has notified the commissioner in writing of the date the permittee plans to start up the waste combustor and the date that performance testing is schedule. Notification shall be given at least 10 days in advance of the compliance test date.	Minn. R. 7011.1260, subp. 7 (continued)
Quarterly Reports: The report shall contain the following items: A. calendar date; B. a graphic or tabular presentation of the sulfur dioxide, nitrogen oxide, and carbon monoxide emissions, the maximum waste combustor unit load level and particulate matter control device temperatures as recorded by Minn. R. 7011.1260, subp. 6, item C, and the daily maximum opacity readings as recorded by Minn. R. 7011.1260, subp. 6, item B, subitem (1). The graphs shall be prepared as follows: (1) the graph shall represent one operating parameter or pollutant; (2) the applicable limit of the parameter or pollutant shall be indicated on the graph; and (3) data shall be expressed in the same units as the applicable operating parameter or emissions limit; C. instances of dumpstack use;	Minn. R. 7011.1285, subp. 3 (Continued)
Quarterly Reports (Continued): D. the identification of operating days when any of the average emission concentrations, percent reductions, operating parameters specified under Minn. R. 7011.1260, subp 6(C), Minn. R. 7011.1272, subp. 2 or the opacity level exceeded the applicable limits. The report shall include the emission levels recorded during the exceedance, reasons for such exceedances as well as a description of corrective actions taken; E. the percent of the operating time for the quarter that the opacity CEMS was operating and collecting valid data; F. the identification of operating days for which the minimum number of hours that emission concentrations, percent reductions, operating parameters specified under Minn. R. 7011.1260, subp. 6(C), Minn. R. 7011.1272, subp. 2 or the opacity level have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;	Minn. R. 7011.1285, subp. 3 (Continued)
Quarterly Reports (Continued) G. the results of daily sulfur dioxide, nitrogen oxides, and carbon monoxide CEMS drift tests and accuracy assessments as required in Minn. R. 7011.1260, subp. 5. H. the information required in Minn. R. 7011.1285, subp 2(C), (D), and (E), summarized to reflect quarterly totals; I. a compliance certification as required in Minn. R. 7007.0800, subp 6(C); and J. if an additive is used to comply with the mercury or PCDD/PCDF emission limits, the total additive used during the calendar quarter, as specified in Minn. R. 7011.1272, subp. 3(B), with supporting calculations.	Minn. R. 7011.1285, subp. 3 (Continued)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Subject Item: EU 001 Boiler 1

Associated Items: GP 001 Waste Combustors

MR 001 CO (stack)

MR 002 NOx (stack)

MR 003 SO2 (stack)

MR 004 O2 (stack)

MR 005 SO2 (scrubber inlet)

MR 006 O2 (scrubber inlet)

MR 015 Temperature (bag house inlet)

MR 016 Steam Flow

MR 020 Opacity (stack)

SV 001 Boiler 1

What to do	Why to do it
OPERATIONAL LIMITS	hdr
Maximum Demonstrated Capacity: Permittee shall not operate the waste combustor at a steam load level above 138,000 lb/hr, (as determined during the May 7 - 8, 2002 PCDD/PCDF performance test) without conducting a performance test to establish a new maximum demonstrated capacity under part 7011.1265, which demonstrates compliance with the emission limitations of 7011.1225 except during the annual PCDD/PCDF performance and the two weeks prior to this test as limited below. During the annual PCDD/PCDF performance test and the two weeks prior to this test, no waste combustor load limitations are applicable.	Minn. R. 7011.1240, subp. 5
The commissioner shall waive the waste combustor load limits for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities identified above, with the following information: 1) a description of the proposed project, and the outcome the project is designed to evaluate; 2) how the project conforms with the activities described above for which the waste combustor load limit can be waived; 3) the length of time the project will take to complete. The commissioner shall waive the maximum demonstrated capacity limits provided that the project conforms with the activities described above and the project can be accomplished within 14 days.	Minn. R. 7011.1240, subp. 5 (continued)
Temperature: less than or equal to 313 degrees F (as measured during the May 7 - 8, 2002 PCDD/PCDF performance test) as measured at the inlet to the particulate matter control device During the annual PCDD/PCDF performance test and the two weeks prior to this test, no particulate matter control device inlet flue gas temperature limit applies.	Minn. R. 7011.1240, subp. 2
The commissioner shall waive the particulate matter control device inlet flue gas temperature limit for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities identified above, with the following information:	Minn. R. 7011.1240, subp. 2 (continued)
1) a description of the proposed project, and the outcome the project is designed to evaluate; 2) how the project conforms with the activities described above for which the particulate matter control device inlet flue gas temperature limit can be waived; 3) the length of time the project will take to complete. The commissioner shall waive the flue gas inlet temperature limits provided that the project conforms with the activities described above and the project can be accomplished within 14 days.	Minn. R. 7011.1240, subp. 2 (continued)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Subject Item: EU 002 Boiler 2**Associated Items:** GP 001 Waste Combustors

MR 008 CO (stack)

MR 009 NOx (stack)

MR 010 SO2 (stack)

MR 011 O2 (stack)

MR 012 SO2 (scrubber inlet)

MR 013 O2 (scrubber inlet)

MR 014 Opacity

MR 017 Temperature (bag house inlet)

MR 018 Steam Flow

SV 002 Boiler 2

What to do	Why to do it
OPERATIONAL LIMITS	hdr
Maximum Demonstrated Capacity: Permittee shall not operate the waste combustor at a steam load level above 121, 310 lb/hr, (as determined during the May 9 - 13, 2002 PCDD/PCDF performance test) without conducting a performance test to establish a new maximum demonstrated capacity under part 7011.1265, which demonstrates compliance with the emission limitations of 7011.1225 except during the annual PCDD/PCDF performance and the two weeks prior to this test as limited below. During the annual PCDD/PCDF performance test and the two weeks prior to this test, no waste combustor load limitations are applicable.	Minn. R. 7011.1240, subp. 5
The commissioner shall waive the waste combustor load limits for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities identified above, with the following information: 1) a description of the proposed project, and the outcome the project is designed to evaluate; 2) how the project conforms with the activities described above for which the waste combustor load limit can be waived; 3) the length of time the project will take to complete. The commissioner shall waive the maximum demonstrated capacity limits provided that the project conforms with the activities described above and the project can be accomplished within 14 days.	Minn. R. 7011.1240, subp. 5 (continued)
Temperature: less than or equal to 315 degrees F (as measured during the May 9 - 13, 2002 PCDD/PCDF performance test) as measured at the inlet to the particulate matter control device During the annual PCDD/PCDF performance test and the two weeks prior to this test, no particulate matter control device inlet flue gas temperature limit applies.	Minn. R. 7011.1240, subp. 2
The commissioner shall waive the particulate matter control device inlet flue gas temperature limit for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities identified above, with the following information:	Minn. R. 7011.1240, subp. 2 (continued)
1) a description of the proposed project, and the outcome the project is designed to evaluate; 2) how the project conforms with the activities described above for which the particulate matter control device inlet flue gas temperature limit can be waived; 3) the length of time the project will take to complete. The commissioner shall waive the flue gas inlet temperature limits provided that the project conforms with the activities described above and the project can be accomplished within 14 days.	Minn. R. 7011.1240, subp. 2 (continued)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Subject Item: EU 005 Lime Storage Silo**Associated Items:** CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 005 Lime Silo Vent

What to do	Why to do it
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Perform Visible Emissions Check and Complete Check List as set forth in Appendix I of the Additional Appendix Material.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

Subject Item: EU 006 Lime Storage Silo**Associated Items:** CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 006 Lime Silo Vent

What to do	Why to do it
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Perform Visible Emissions Check and Complete Check List as set forth in Appendix I of the Additional Appendix Material.	Minn. R. 7007.0800, subp. 2

TABLE B: SUBMITTALS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing
Permit Number: 04900005 - 001

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

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

Send any application for a permit or permit amendment to:

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

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

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

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

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

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Information	due 1,096 days after Permit Issuance. Submit modeling data as specified in MPCA guidance for Modeling Information Requests (for pollutant). This modeling information is for data collection purposes, no modeling analysis is required at this time. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility
Fugitive Control Plan	due 60 days after Permit Issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and record keeping. The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the permittee is out of compliance with Minn. R. 7011.0150 or the fugitive emission control plan, then the permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test	GP001
Performance Test Report - Microfiche Copy	due 105 days after Performance Test or 74 days after receipt of Performance Test Report by Permittee for each Performance Test conducted.	GP001
Performance Test Report	due 45 days after Performance Test or 14 days after receipt of the Performance Test Report by the permittee for each Performance Test conducted, whichever is later. Each report must bear the permittee's date stamp receipt.	GP001

TABLE B: RECURRENT SUBMITTALS

06/01/04

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005 - 001

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of CEMS/COMS bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	GP001
Quarterly Report	due 30 days after end of each calendar quarter following Permit Issuance	GP001
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility

APPENDIX MATERIAL

Facility Name: NSP dba Xcel Energy - Red Wing

Permit Number: 04900005-001

APPENDIX I

Visible Emissions Checklist(s) Requirements

Emission Units and Stack/Vents:

Lime storage silos (EU 005 and EU 006)

Visible Emissions Checklist(s): The Permittee shall check for visible emissions while loading silo during daylight hours at least once each month. If visible emissions are observed, the permittee shall determine the cause and take corrective actions as soon as possible. The results of the check shall be recorded on a checklist containing the following:

- 1) Printed name of observer.
- 2) Signature of observer.
- 3) Date and time of observation.
- 4) Indication of process and control equipment performance, either "requires attention," or "does not require attention." This determination is based upon an observed change in visible emission characteristics from that observed when this source and its pollution control equipment are properly operated and maintained. A change in visible emission characteristics will be indicative of "requires attention."
- 5) Description of investigation and corrective actions completed for each "requires attention" observation.
- 6) Weather conditions (temperature, cloud cover, wind, precipitation).
- 7) Indication if plume were limited by visible moisture in the plume.
- 8) Emission unit (EU) and Stack/Vent (SV) ID number(s).
- 9) Short description of emission unit.

APPENDIX II

RDF Receiving Area Housekeeping Plan

Introduction

During the course of normal activities, RDF can become airborne due to the design of the Receiving Area Building (one side open for semi-trailers). It is necessary to implement the following housekeeping procedures to minimize particulate emissions from open doors.

Precautions

Fugitive RDF should be collected and placed in the Receiving Area, either on the Walking Floor Conveyor or in the Storage Building.

Housekeeping

To minimize the opportunity for RDF to become airborne

1. The doors to the Receiving Area Storage Building shall be kept closed at all times when not loading RDF on the walking floor. Keep main access doors to the Storage Building closed when not unloading trucks in the Storage Building.
2. Truck drivers delivering RDF to the Plant shall sweep the backs of the trailers and doors free of RDF and into the walking floor before leaving the truck bays.
3. The truck unloading side of the Receiving Area Building will be cleaned a minimum of 3 times/week with regards to operation on RDF fuel.
4. Weekly inspections of the site will be performed during non-snow covered times of the year to monitor the site for fugitive RDF.
5. The Transfer Conveyor gallery will be cleaned on at least a weekly basis.
6. Fugitive RDF will be picked up and returned to the Receiving Area building on a regular basis during non-snow covered times of the year.

Traffic Control

Any equipment utilized in the Receiving Area building shall be confined to the building. If necessary to take equipment from the facility, vehicles shall be inspected for loose RDF and cleaned before leaving the area.

APPENDIX III

Insignificant Activities

Insignificant Activities Applicable Requirements

RDF Conveyor

Minn. R	Requirement
7011.0715, subp. 1(A)	Particulate Matter: less than or equal to 0.3 gr./dscf. of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.
7011.0715, subp. 1(B)	Opacity: less than or equal to 20%.

Auxiliary Boiler

Minn. R	Requirement
7011.0515, subp. 1	Total particulate matter: less than or equal to 0.4 lb./MMBtu heat input.
7011.0515, subp. 2	Opacity: less than or equal to 20% except for one six-minute period per hour of not more than 60% 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% or whenever any one-hour period contains one or more six-minute periods during which the average opacity exceeds 60%.

RDF Unloading

Minn. R	Requirement
7011.0715, subp. 1(A)	Particulate Matter: less than or equal to 0.3 gr./dscf. of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.
7011.0715, subp. 1(B)	Opacity: less than or equal to 20%.
7007.0800, subp. 2	Comply with RDF Receiving Housekeeping Plan in Appendix II of the Additional Appendix Material.

Insignificant Activities Without Applicable Requirements

The following activities/emission units are insignificant activities for which there are no applicable requirements:

- Fuel oil storage tanks.
- Space heaters.
- Welding equipment.
- Road and parking lot fugitive emissions.
- Analysis laboratory.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 04900005-001

This Technical Support Document (TSD) is for all interested parties of the permit for the **Northern States Power Company (doing business as Xcel Energy) – Red Wing Plant**, located in Red Wing, Minnesota. This document also meets the requirements set forth by federal regulations and Minnesota Rules (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.

CONTENT:

1. GENERAL INFORMATION

- 1.1. Applicant and Stationary Source Location
- 1.2. Description of the Facility
- 1.3 Description of the Permit Action
 - 1.3.1 Draft Permit
 - 1.3.2 Permitting History
 - 1.3.3 Changes Incorporated Into the Draft Permit
 - 1.3.4 Permitting Issues
 - 1.3.4.1 Allowable Fuels
 - 1.3.4.2 Waste Oil and Sorbents
 - 1.3.4.3 Insignificant Activities
- 1.4 Emissions of the Facility
 - 1.4.1 Limited, Controlled Potential to Emit and Uncontrolled, Unlimited Potential to Emit Calculations
 - 1.4.2 Actual Emission Calculations

2. APPLICABLE RULES (REGULATORY AND/OR STATUTORY BASIS OF EMISSION LIMITS)

- 2.1 Federal New Source Review (NSR)
 - 2.1.1 Change to Boilers to Accommodate RDF
 - 2.1.2 Twenty Ton per Hour RDF Fuel Usage Limit
- 2.2 Federal New Source Performance Standards (NSPS) (40 CFR pt. 60)
 - 2.2.1 40 CFR § 60.50, Subpart E, Standards of Performance for Incinerators.
 - 2.2.2 40 CFR § 60.30b, Subpart Cb, Emissions Guidelines and Compliance Schedules for Municipal Waste Combustors.
- 2.3 Federal Acid Rain Program
- 2.4 National and State Ambient Air Quality Standards (40 CFR pt. 50 and Minn. R. ch. 7009)
- 2.5 National Environmental Standards for Hazardous Air Pollutants (40 CFR pt. 61 and 63)
 - 2.5.1 40 CFR § 61.50, Subpart E - National Emission Standards for Mercury.
- 2.6 State Performance Standards
- 2.7 Environmental Assessment

3. BASIS FOR SPECIFIC PERMIT CONDITIONS

- 3.1 Total Facility
- 3.2 Emission Limits
- 3.3 Monitoring Requirements
 - 3.3.1 CEMS/COMS
 - 3.3.2 Minimum Temperature
 - 3.3.3 Periodic Monitoring
- 3.4 Table B Requirements

4. CONCLUSION

1. GENERAL INFORMATION

1.1. Applicant and Stationary Source Location

Applicant/Address	Stationary Source/Address (SIC Code: 4911)
Northern States Power Company d/b/a Xcel Energy 414 Nicollet Mall Minneapolis, MN 55401-1993	Northern States Power Company d/b/a Xcel Energy – Red Wing Plant 801 East 5 th Street Red Wing, MN 55066

1.2. Description of the Facility

The facility covered by the draft permit, Air Emissions Permit No. 04900005-001, Red Wing Plant is an electric power generating station located along the Mississippi River in Red Wing Minnesota. The Red Wing plant is rated at 25 megawatts (MW) and has two boilers that primarily burn refuse derived fuel (RDF). The RDF burned at this facility is processed under contract with the Elk River Resource Recover Facility in Elk River, MN; and the Ramsey/Washington Resource Recovery Facility in Newport, MN.

Energy is produced through combustion of RDF in two traveling grate boilers. The units are identified in the permit as emissions units 1 and 2 (EU 001 and EU 002). The units are 180 Million Btu/hr each, which equates 16.4 tons of RDF per hour (at an assumed heat content of 5,500 Btu/lb.). The combustors can also burn natural gas and wood. The boilers were installed in 1947. The Permittee was issued a permit to convert to burn RDF in 1984.

Each boiler exhausts through separate pollution control equipment, dry lime injection for the control of acid gases and a baghouse for the control of Particulate Matter (PM) and a 187-ft. tall stack. Exhaust gases from each boiler are continuously monitored for Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), opacity, and Oxygen (O₂). A number of operating parameters, including baghouse inlet temperature, and steam flow rate, are also monitored continuously.

Hot water for internal use when the EU 001 and EU 002 are down is provided by a natural gas-fired boiler.

Ash produced in the course of waste combustion is stored in an enclosed area at the facility. The ash is transported using covered trucks to the Red Wing Ash Landfill (permit number SW-307). Other sources of PM emissions are the lime storage silo and RDF receiving building.

1.3. Description of the Permit Action

This permit action is for the reissuance of total facility operating permit. The draft permit satisfies the permitting requirements under Title V of the 1990 Clean Air Act Amendments, codified in 40 CFR pt. 70. The permit meets the requirements of Minn. R. 7007.0800 and 7007.0801, which respectively, specify the conditions necessary for Part 70 operating permits and waste combustor air emission permits.

1.3.1 Draft Permit

The Red Wing facility is subject to federal emission guidelines that are enforced through Minnesota Rules. The Minnesota Pollution Control Agency (MPCA) promulgated rules regulating waste combustors in 1994, in response to federal emission guidelines that were promulgated in 1991. New federal rules were promulgated in December 1995. The rules were vacated by the federal courts in December 1996, but the rules, as applicable to large waste combustors, were reinstated March 21, 1997. The federal rules were further amended in August 1997. The MPCA

amended the Minnesota waste combustor rules to comply with the federal emission guidelines, effective date May 4, 1998.

1.3.2 Permitting History

The application for this Title V permit was received in September of 1995, in compliance with Minn. R. 7007.0350. The MPCA received updated applications in February of 1999 and December of 2002.

The last total facility permit for the Red Wing facility was issued in 1984, which authorized the facility to burn RDF in addition to coal. Since the last total facility permit was issued, several permit amendments and installation/operation (I/O) permits have been issued. The existing total facility permits have expired; the facility has continued operating under the expired permit as allowed by Minn. R. 7007.0450. The permitting history of the facility is as follows:

Table 1
Permit History of Red Wing Plant

Date	Permitting Action
August 28, 1984	Operating permit
November 5, 1984	Amendment No. 1 <ul style="list-style-type: none"> ▪ Authorize a test-burn of peat.
December 14, 1984	Amendment No. 2 <ul style="list-style-type: none"> ▪ Extend the period under which the permittee could test burn peat.
April 3, 1985	Amendment No. 3 <ul style="list-style-type: none"> ▪ Authorize coal tar/soil combustion for specific time period
March 28, 1986	Amendment No. 4 <ul style="list-style-type: none"> • Establish ton/hour incinerator capacity • Authorize installation of third boiler • Establish separate PM limits for coal and RDF • Establish additional monitoring requirements • Increase stack testing frequency and the number of pollutants for which tests are conducted
August 25, 1987	Amendment No. 5 <ul style="list-style-type: none"> ▪ Establish ash management procedures and reporting ▪ Establish operator training requirements ▪ Establish operation and maintenance plan requirements ▪ Establish ton/day incinerator capacity
August 28, 1988	Amendment No. 6 <ul style="list-style-type: none"> • Establish additional ash management requirements
January 27, 1989	Amendment No. 7 Establish SO ₂ continuous monitoring requirement
August 20, 1990	I/O permit for installation and operation of RDF handling PM control system
March 27, 1997	Amendment No. 8 <ul style="list-style-type: none"> ▪ Clarify fuel type limitations

1.3.3 Changes Incorporated Into the Draft Permit

- A limit on each of the following pollutants has been added:
Cadmium
Lead
Mercury
Nitrogen Oxides

Carbon Monoxide
Condensable Particulate Matter
Polychlorinated Dibenzo Dioxins and Polychlorinated Dibenzo Furans (PCDD/PCDF a.k.a. municipal waste combustor organics)
Hydrogen Chloride

- The limit on each of the following pollutants has become more stringent:
Sulfur Dioxide
Opacity
- The furnace temperature monitoring requirements have been removed.
- Performance testing has become more frequent and more pollutants have been added to the list of pollutants for which performance tests must be conducted.
- More pollutants have been added to the list of pollutants that must be monitored continuously.
- Operator training and certification requirements have changed.
- Reporting requirements have changed.
- Odor limits have been removed

1.3.4 Permitting Issues

The following were major items of discussion during the review of the Red Wing Plant permit application:

1.3.4.1 Allowable Fuels

It was the decision of Northern States Power Co., to limit the fuels that the Red Wing Plant is allowed to burn to RDF, natural gas, wood and used oil (in limited quantities). The facility is capable of, and has been, permitted to burn these fuels. Therefore, New Source review is not a consideration. The applicability analysis and limits have been established taking into consideration each of the allowable fuels burned and the allowed quantities (180 gallons per hour for waste oil).

The draft permit requires the use of an auxiliary fuel (natural gas) to warm the combustion and pollution control devices and to maintain good combustion conditions.

The draft permit allows the Permittee to operate the facility on natural gas or wood. The most likely scenario is operation on natural gas. Although natural gas has not been burned extensively in the past, the Permittee sees the possible need to operate, at least for a relatively short period of time, on natural gas when RDF is not available and demand for electricity is high. Several aspects of operating on natural gas or wood were investigated:

- **At what point are emissions units 1 and 2 not subject to the waste combustor limits when the emissions unit is switched from RDF to another fuel?**
The draft permit states that the waste combustor emissions limits apply when RDF is being combusted. That is the traveling grate on which the RDF burns has moved more than the length of the combustion chamber. The draft permit requires the Permittee to continuously monitor the speed of the traveling grate and record when RDF feed is started and stopped.
- **What limits apply when combusting fuels other than RDF?**
The emissions limits of Minn. R. 7011.0510, Standards of Performance for Existing Indirect Heating Equipment apply when burning either natural gas or wood alone.
- **What about operation of pollution control and monitoring equipment?**
The draft permit requires the Permittee to continue operating the PM control equipment, CEMS and COMS. The draft permit allows the Permittee to discontinue operation of the acid gas control system because SO₂ emissions are not significant when burning natural gas or wood.

1.3.4.2 Waste Oil and Sorbents

The draft permit contains provisions for the Red Wing Plant to burn waste oil and sorbents that are generated within the NSP system up to 180 gallons per hour of waste oil. The draft permit requires permittee to track the volume of waste oil or waste oil contaminated sorbent placed in the fuel stream, the hour(s) of the day that the waste oil is burned, and the source of the oil.

With considering the effects of pollution control equipment, and with limiting each waste combustor unit to 180 gallons per hour of waste oil, each unit has the potential to emit approximately 0.014 pounds per hour of PM₁₀. Burning RDF alone, each unit has the potential to emit approximately 1.018. per hour of PM₁₀. The potential to emit hydrochloric acid (the hazardous air pollutant with the greatest PTE) is approximately 0.021 lb./hr (considering controls); the potential to emit HCl is approximately 0.891 lb./hr when burning RDF alone (considering controls). Other hazardous air pollutants for which AP-42 has published emission factors for burning waste oil that are not listed for RDF combustion include: antimony, beryllium, cobalt, manganese, selenium. The estimated emission rates for burning waste oil are based on AP-42 emission factors and Xcel Energy data, where data are available for waste oil from Xcel Energy facilities. The emission estimates in section 1.4 are based, in part, on burning waste oil.

1.3.4.3 Insignificant Activities

Several emission units at the Red Wing Plant are considered insignificant activities. Insignificant activities are those activities or emission units that have potential (or in some cases actual) emissions that are of little or no consequence. While the emissions from these activities may be quite small, they are still none-the-less subject to certain requirements that must be included in the permit (stationary engines, for example). Those insignificant activities with applicable requirements are included in the Additional Appendix Material that is attached to the permit.

The following activities/emissions units are insignificant activities for which applicable requirements exist:

- Stationary engines
- RDF conveyor
- RDF unloading
- Back-up boiler

The following activities/emission units are insignificant activities for which there are no applicable requirements:

- Fuel storage tanks
- Space heaters
- Welding equipment
- Road and parking lot fugitive emissions
- Analysis laboratory

1.4 Emissions of the Facility

Table 2 presents a summary of the potential emission rates for criteria pollutants and Hazardous Air Pollutants (HAPs) in tons per year (tpy), attributable to the facility. The “uncontrolled, unlimited” PTE represents the worst case emissions estimate which could occur if all emission units operated 8,760 hours per year at maximum capacity without pollution control equipment. The “limited” PTE shown in Table 2 represents the maximum emissions which the facility, including pollution control equipment, could emit without violating permit limits (for example, 0.020 gr./dscf PM). For pollutants that are not affected by permit limits, the limited PTE represents the maximum potential emissions expected if control equipment is operating.

Three different methods were used to calculate emissions from Red Wing. An “F factor,” AP-42 emission factor, and emissions inventory data (usually based on performance tests and actual throughputs).

Table 2a
Total Facility Potential to Emit and Actual Emissions Summary

Pollutant	Uncontrolled, Unlimited Potential to Emit (tons/year)	Limited, Controlled Potential to Emit (tons/year)	Actual Emissions (tons/year)
CRITERIA POLLUTANTS			
Particulate Matter (PM)	3880	71.2	5.2
Particulate Matter less than 10 micron (PM ₁₀)	3880	71.2	5.2
Particulate Matter (Front Half)	3380	42.8	5.2
Sulfur Dioxide (SO ₂)	4370	110	65.2
Nitrogen Oxides (NO _x)	850	745	346
Carbon Monoxide (CO)	1040	363	96
Volatile Organic Compounds (VOCs)/Ozone	68	68	0.08
Lead	2.88	0.69	0.01

Table 2b
Total Facility Potential to Emit and Actual Emissions Summary

Pollutant	Uncontrolled, Unlimited Potential to Emit (tons/year)	Limited, Controlled Potential to Emit (tons/year)	Actual Emissions (tons/year)
HAZARDOUS AIR POLLUTANTS (HAP)			
1,4 – Dichlorobenzene	0.0026	0.0026	0.0000
2 – Butanone (MEK)	0.01	0.01	0.0000
2,4 Dinitrophenol	0.000312	0.000312	0.0000
2,4,6-Trichlorophenol	0.000038	0.000038	0.0000
4 Nitrophenol	0.0002	0.0002	0.0000
Acetaldehyde	1.44	1.44	0.0000
Acetophenone	0.0000056	0.0000056	0.0000
Acrolein	6.94	6.94	0.0000
Antimony	0.04	0.01	0.0000
Arsenic	0.17	0.17	0.00048
Benzene	7.28	7.28	0.0000
Beryllium	0.004	0.002	0.0000
Bis(2-ethylexyl) phthalate	0.00008	0.00008	0.0000
Cadmium	0.46	0.06	0.001
Carbon Tetrachloride	0.08	0.08	0.0000
Chlorine	1.37	1.37	0.0000
Chlorobenzene	0.06	0.06	0.0000
Chloroform	0.05	0.05	0.0000
Chromium	0.04	0.04	0.004
Cobalt	0.01	0.01	0.0000
Dichlorobenzene	0.0026	0.0026	0.0000
Ethylbenzene	0.05	0.05	0.0000
Formaldehyde	7.63	7.63	0.001
Hexane	3.76	3.76	0.025
Hydrogen Chloride	976	81.6	4.54
Manganese	2.78	0.17	0.0000
Mercury	0.15	0.05	0.0046
Municipal Waste Combustor Organics	0.00026	0.000047	0.0000027
Naphthalene	0.17	0.17	0.0000
Nickel	0.07	0.01	0.0058
o – Xylene	0.04	0.04	0.0000
Pentachlorophenol	0.0001	0.0001	0.0000
Phenol	0.09	0.09	0.0000
POM	0.0002	0.0002	0.0000
Propionaldehyde	0.11	0.11	0.0000
Selenium	0.04	0.005	0.0000
Toluene	1.60	1.60	0.0000
Styrene	3.30	3.30	0.0000
Vinyl Chloride	0.03	0.03	0.0000
Total HAPs	1,014	116	4.58

1.4.1 Limited, Controlled Potential to Emit and Uncontrolled, Unlimited Potential to Emit Calculations

For the criteria pollutants, the Uncontrolled, Unlimited Potential to Emit estimates are based on an AP-42 (Compilation of Air Pollutant Emission Factors, Fifth Edition, January 1995) emissions factor or performance testing and AP-42 control efficiencies. The Limited, Controlled Potential to Emit estimates are based on an “F factor” and the applicable rule limit. The Actual Emission estimates are based on throughput information as reported to the Agency. For the hazardous air pollutants, with the exception of mercury, MWC organics, and cadmium, all estimates are based on an AP-42 emissions factor. Emissions estimates of mercury, MWC organics, and cadmium are based on performance tests. Emissions in lb./hr. or tons/yr. can be calculated using these methods, emission limits, and any other limiting factors.

An F factor is the calculated exhaust gas flow rate corrected to standards conditions (1 atm and 68 degrees Fahrenheit). The emission estimates in Table 2 are based on an F factor of 9,570 dscf/MMBtu and a heat content of 5,500 Btu/lb. of RDF (both of these values are the values used in AP-42). An F factor calculation is based on fuel analysis, the relative portions of hydrogen, carbon, nitrogen, sulfur, and oxygen and the heat value of the fuel. Emission estimates based on an F factor were calculated as follows:

For total PM, the emission limit is 0.020 gr./dscf corrected to 7 percent O₂. The maximum heat input rate from RDF is 180 million Btu tons per hour per unit.

Maximum Hourly Emission Rate

$$7.40 \text{ lb/hr} = \left(\frac{0.020 \text{ gr}}{\text{dscf}} \right) \left(\frac{9,570 \text{ dscf}}{10^6 \text{ Btu}} \right) \left(\frac{180 \times 10^6 \text{ Btu}}{\text{hr.}} \right) \left(\frac{1 \text{ lb}}{7,000 \text{ gr}} \right) \left(\frac{20.9\% \text{ O}_2}{20.9\% - 7\% \text{ O}_2} \right)$$

Maximum Annual Emission Rate

$$35.6 \text{ tons/unit} \cdot \text{year} = \left(\frac{0.020 \text{ gr}}{\text{dscf}} \right) \left(\frac{9,570 \text{ dscf}}{10^6 \text{ Btu}} \right) \left(\frac{180 \times 10^6 \text{ Btu}}{\text{hr}} \right) \left(\frac{8760 \text{ hr}}{\text{year}} \right) \left(\frac{1 \text{ lb}}{7,000 \text{ gr}} \right) \left(\frac{1 \text{ ton}}{2,000 \text{ lb.}} \right) \left(\frac{20.9\% \text{ O}_2}{20.9\% - 7\% \text{ O}_2} \right) \left(\frac{110\%}{100\%} \right)$$

Emission estimates based on AP-42 emission factors for natural gas combustion were calculated as follows:

$$87.9 \text{ tons of CO/yr} = \left(\frac{84.0 \text{ lb of CO}}{\text{million scf}} \right) \left(\frac{0.239 \text{ million scf}}{\text{hr}} \right) \left(\frac{\text{ton}}{2,000 \text{ lb}} \right) \left(\frac{8,760 \text{ hr}}{\text{yr}} \right)$$

1.4.2 Actual Emission Calculations

The actual emissions are based on actual throughputs and fuel usage.

2. APPLICABLE RULES (REGULATORY AND/OR STATUTORY BASIS OF EMISSION LIMITS)

2.1 Federal New Source Review (NSR)

2.1.1 Change to Boilers to Accommodate RDF

The NSR permit program was established by the 1977 Clean Air Act Amendments. This program sets emission thresholds for six criteria pollutants, based on a facility's PTE. The program applies to major new sources or modifications to existing sources, which could result in “significant” increases of one or more pollutants over

specified levels. (“Major new source,” “modification,” “significant increase,” and “potential to emit” (PTE) are all defined in 40 CFR pt. 52.) If the PTE of a new source or modification exceeds the set emission thresholds, the facility must demonstrate that “Best Available Control Technology” (BACT) will be used to control emissions prior to receiving a permit authorizing construction of the new source or modification. Alternatively, rather than conducting a BACT analysis, a facility may accept emission limits in a federally enforceable permit which reduce the PTE to below the applicable thresholds.

The Red Wing Plant was modified to burn RDF in 1985. This modification was specifically exempted in federal rule from triggering NSR applicability (40 CFR § 52.21(b)(2)(iii)(d)). Therefore, the changes made to the stationary source did not trigger NSR. Burning other fuels, including wastes other than RDF, natural gas or wood, would require a review of NSR applicability.

2.1.2 Twenty Ton per Hour RDF Fuel Usage Limit

The draft permit does not include the 20-ton per hour RDF fuel usage limit contained in the previous permit. The ton/hour RDF usage limit is omitted from the draft permit for the following reasons:

- the waste combustor rules and the draft permit contain a more effective limit based on the steam generation rate;
- at 480 tons per day, each unit would have to be operated at a rate of 220 MMBtu/hr (assuming 5,500 Btu/lb for RDF). Each unit is rated at 180 MMBtu/hr on RDF. Even if the unit is continuously operated at 110 percent of the maximum demonstrated capacity (as allowed by rule and the draft permit), the heat input rate is only 198 MMBtu/hr. Therefore, this limit can have no affect on the operation of EU001 or UE002.

As shown in Table 3 below, the area in which the facility is located is designated as attainment for all criteria pollutants. Table 3 lists the pollutants for which the PTE of the Red Wing Plant is greater than the applicable threshold.

Table 3
Facility Classification

Classification	Major	Synthetic Minor	Minor
Prevention of Significant Deterioration	*		
Non Attainment Area		NA	
Operating Permit Program	**		

* The pollutants for which the limited potential-to-emit is greater than the PSD thresholds are sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon monoxide (CO).

** The pollutants for which the limited potential-to-emit is greater than the part 70 permitting thresholds are sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO) and hazardous air pollutants (HAPs).

2.2 Federal New Source Performance Standards (40 CFR pt. 60)

2.2.1 40 CFR § 60.50, Subpart E, Standards of Performance for Incinerators

New Source Performance Standard 40 CFR § 60.50, Subpart E does not apply to the Red Wing Plant. As per the November 29, 1974, Memorandum Richard D. Wilson, Director, Division of Stationary Source Enforcement to Nicholas Humber, Director, Resource Recovery Division, Office of Solid Waste Management Programs in which it was determined that existing fossil fuel-fired steam generators, which are changed to accommodate the use of municipal refuse, are not subject to 40 CFR pt. 60, Subpart E.

2.2.2 40 CFR § 60.30b, Subpart Cb, Emissions Guidelines and Compliance Schedules for Municipal Waste Combustors

The emissions guidelines promulgated by the EPA compel states to promulgate standards of performance for waste combustors. The MPCA recently promulgated the required standards of performance. These standards (Minnesota

Rules) are at least as stringent as the emission guidelines and the draft permit is at least as stringent as Minnesota Rules. See the discussion of the applicability of Minnesota Rules below for a further discussion of the requirements of the federal emission guidelines.

2.3 Federal Acid Rain Program

Title IV of the Clean Air Act Amendments of 1990, requires electric utilities which burn fossil fuels to substantially reduce emissions of SO₂ and NO_x, the primary pollutants that contribute to acid rain. 40 CFR §72.6(b)(7), states that a solid waste incinerator is not an affected unit under the Acid Rain Program if more than 80 percent (on a BTU basis) of the annual fuel consumed at such incinerator is a fuel other than fossil fuels. The Red Wing Plant derives more than 80 percent of its heat input from RDF, which is not a fossil fuel. The rules also apply to units with a name plate capacity greater than 25 MWe. The Red Wing facility consists of two boilers; each has a capacity less than 25 MWe. Therefore, the Red Wing Plant is not subject to any Acid Rain Program regulations.

2.4 National and State Ambient Air Quality Standards (40 CFR pt. 50 and Minn. R. ch. 7009)

The National Ambient Air Quality Standards (NAAQS), as found in 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards (MAAQS), set the maximum concentration of pollutants allowed in the ambient air. As such, these standards apply to all air emissions sources. Ambient air monitoring and dispersion modeling is used to determine whether a facility's emissions could cause a violation of these standards.

In accordance with current MPCA policy, the draft permit requires the Permittee to submit critical information needed to model emissions from the facility because the facility's limited emissions of SO₂ and NO_x are greater than 100 tons per year. However, the Permittee is not required to model the impact from the facility's emissions at this time. The current MPCA modeling policy is available on the MPCA web site at <http://www.pca.state.mn.us/air/modeling.html>.

2.5 National Environmental Standards for Hazardous Air Pollutants (40 CFR pt. 61 and 63)

Air emission units at the facility are listed source categories for which National Environmental Standards for Hazardous Air Pollutants under 40 CFR pt. 63. These are "National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters," (68 FR 6060, 1/13/03) and "National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines," (67 FR 77829, 12/19/02). The standards are still pending and, as such, there are no applicable requirements. If promulgation of these NESHAPs results in new applicable requirements, the permit will be modified as necessary at that time to reflect the new requirements.

2.5.1 40 CFR § 61.50, Subpart E - National Emission Standards for Mercury

This regulation does not apply to the facility because it does not incinerate sewage sludge.

2.6 State Performance Standards

The recently promulgated (1998) Minnesota waste combustor rules adopt, and are at least as stringent as, the federal emission guidelines for large waste combustors. These rules apply to the Red Wing Plant. The draft permit is at least as stringent as the Minnesota rules. The rules and the draft permit include provisions that regulate, in addition to the above-listed emission limits, operator training and certification, combustor unit and control equipment operating conditions, record keeping and reporting, types of fuels allowed in the combustor units, performance testing, emissions monitoring, and ash disposal.

Minnesota standards of performance, other than the waste combustor rules, apply to some portions of the facility. The Industrial Process Equipment Rule (Minn. R. 7011.0700 to 7011.0735) applies to PM emission sources for which no other standard of performance applies.

2.7 Environmental Assessment

This permit does not authorize new construction or increases in air emissions that would be subject to environmental review under Minn. R. ch. 4410.

3. BASIS FOR SPECIFIC PERMIT CONDITIONS

The basis for permit terms is described in this part, either for individual requirements or for groups of related requirements. This document contains discussion primarily of conditions that are unique to the Red Wing Plant and discussion of how specific requirements are to be implemented through this permit by the permittee. There are many conditions in the permit that will not be discussed in this document. A discussion of these conditions can be found in the Statements of Need and Reasonableness for the Minnesota waste combustor rules that were promulgated on June 20, 1994, and May 18, 1998. A copy of these documents can be found at the Minnesota Pollution Control Agency.

3.1 Total Facility

Total facility requirements that are applicable to all facilities in Minnesota are not discussed in this document because they are common to all air emission permits and are self-explanatory.

Minn. R. 7007.0501 and 7007.0801 contain permit application content and permit content requirements for all waste combustor permit applications and permits. These requirements are common to all waste combustors and will not be discussed in this document beyond the unique circumstances for the Red Wing Plant.

The Red Wing Plant primarily burns RDF that has been processed by other companies, NRG Energy, Inc. (NRG), Elk River Resource Recovery Facility, and Ramsey/Washington County. For this reason, plans that deal with municipal solid waste (MSW) or otherwise unprocessed waste are, and will continue to be, prepared by these companies. These plans include the Industrial Waste Management Plan, Household Hazardous Waste Management Plan, and Ash Toxicity Reduction Plan (as much as it is affected by waste processing). The permittee is required by the permit to amend the plans provided by these companies as necessary to cover any situations that are not included in the plans. For example, the permittee is required to submit a plan for a handling waste that has not been processed into RDF and has therefore not been evaluated in accordance with the above-cited Industrial Waste Management Plans.

3.2 Emission Limits

Table 4
Emission Limits

Pollutant	Emission Limit When Combusting RDF (emissions concentrations corrected to 7% O ₂ , except opacity)	Emission Limit When Combusting Natural Gas or Wood
SO ₂	75% removal or 29 ppm	
HCl	95% removal or 29 ppm	
CO	200 ppm	
Front-half Particulate Matter	0.012 gr./dscf	
Total Particulate Matter	0.020 gr./dscf	0.6 lb/MMBtu
Opacity	10 %	20% except for one 6-minute period per hour of not more than 60% opacity
Lead	440 µg/dscm	

Dioxins/Furans (PCDD/PCDF)	30 ng/dscm	
Cadmium	40 µg/dscm	
NO _x	230 ppmv when averaged over EU001 and EU002 or 250 ppmv for each unit	
Mercury (short term)	85% removal or 50 µg/dscm	
Mercury (long term)	85% removal 30 µg/dscm	

3.3 Monitoring Requirements

3.3.1 CEMS/COMS

Continuous monitoring systems for NO_x, CO, O₂, SO₂, unit load (steam flow), opacity and baghouse inlet temperature have been installed and certified at the facility as required in the recently promulgated Minnesota waste combustor rules.

3.3.2 Minimum Temperature

The existing permit contains a minimum combustion chamber operating temperature of 1800°F. Permits issued by MPCA prior to promulgation of the waste combustor rules typically included minimum operating temperatures to encourage good combustion practices. Optimal combustion is necessary to minimize formation of certain pollutants, including CO and PCDD/PCDF. As stated in the 1994 waste combustor rule SONAR, p. 148, the goals of good combustion practice are to maximize destruction of pollutants in the furnace, minimize PM carry-over, and to minimize conditions downstream that allow for the low-temperature formation of dioxins. This includes maintaining temperatures that are high enough to cause thermal decomposition of hydrocarbons and maintaining the boiler load at the appropriate level.

A minimum boiler temperature is no longer included in the permit because it has been replaced with monitoring CO emissions and boiler load. Both of these parameters are required to be continuously monitored under the waste combustor rules.

3.3.3 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements. To achieve this objective, US EPA issued guidance (September 15, 1998 memorandum Periodic Monitoring Guidance for Title V Operating Permits Programs) on periodic monitoring requirements for permitted sources. In this guidance, EPA indicates that monitoring required by recently promulgated New Source Performance Standards (and therefore the Emission Guidelines upon which the Minnesota rule is based) meet the requirements for periodic monitoring. This provision applies to the waste combustors and ash handling equipment. Several emission units at the Red Wing Plant are not subject to the requirements of the recently promulgated Minnesota waste combustor rule and therefore monitoring must be considered.

In evaluating the monitoring requirements included in the draft permit for these emissions units, the agency considered the following as per the September 15, 1998, memorandum:

- the likelihood of violating the applicable requirement;
- whether add-on control are necessary to meet the emission limit;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units.

Table 5 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by other rules is nonexistent or inadequate.

Table 5
Emission Units Subject to Additional Monitoring

Emission Unit	Emission limit	Additional Monitoring	Discussion
Boiler No. 3 (back-up boiler)	PM: ≤ 0.4 lb./MMBtu Opacity: ≤ 20 % with exceptions	None	Boiler is fired by natural gas and therefore the likelihood of violating either of the emission limits is very small.
RDF Conveyor	Opacity: ≤ 20 %. PM: ≤ 31.19 lb./hr. (limits based on 40 tph throughput)	None	The potential to emit (uncontrolled) of this emission unit is approximately 0.007 lb./hr. Therefore, the rule limit is more than 4,000 times the potential to emit.
RDF Unloading	Opacity: ≤ 20 % PM: ≤ 31.19 lb./hr. (limits based on 40 tph throughput)	Housekeeping Requirements	Given the design of the RDF unloading building (one side open for semi trailers), it is technically impossible to conduct a PM performance test. Housekeeping requirements (minimizing the opportunity for RDF to become airborne) provide a feasible alternative to conducting a performance test that is impossible to conduct. These house-keeping requirements are included in the additional appendix material of the permit.
Lime Storage Silo.	Opacity: ≤ 20 %. PM: ≤ 0.3 gr./dscf	VE Checks While Loading Silo	The lime storage silo is equipped with a fabric filter. Assuming that the airflow through the system is 750 cfm, the limit would allow an emission rate of approximately 3.9 lb./hr. The potential to emit (uncontrolled) of this emission unit is approximately 0.7 lb./hr. This is less than 20% of the rule's limit. Assuming that the filter is 99 % efficient, the controlled potential to emit is 0.007 lb./hr. This is less than 1/ 500 of the rule's limit.

3.4 Permit Table B Requirements

The draft permit includes a section identified as Table B which contains requirements that call for submittals or MPCA notifications. These requirements are set out separately to allow compliance to be tracked using the MPCA's DELTA database system.

The draft permit contains numerous reporting requirements. The MPCA staff has attempted to consolidate reporting requirements where possible.

4. CONCLUSION

Based on the information provided by the permittee, the MPCA has reasonable assurance that the continued operation of the emission facility, as described in the Air Emission Permit No. 04900005-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.