

**AIR EMISSION PERMIT NO. 01300015- 004**

**IS ISSUED TO**

**Northern States Power Company - Xcel Energy**

**XCEL ENERGY - KEY CITY/WILMARTH**

1040 Summit Avenue

Mankato, Blue Earth County, MN 56001

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permits/permit applications:

Permit Type	Application Date	Issuance Date
Total Facility Operating Permit	9/15/1995	4/29/2002
Administrative Amendment	6/12/2002	6/27/2002
Administrative Amendment	7/23/2002	8/19/2002
Major Amendment	5/15/2003	See below

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.

<b>Permit Type:</b>	Federal; Pt 70/Major for NSR	Major Amendment
<b>Issue Date:</b>	April 29, 2002	December 31, 2003
<b>Expiration:</b>	April 29, 2007; Title I Conditions do not expire	

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Major Facilities Section Manager  
Majors and Remediation Division

for Sheryl Corrigan  
Commissioner  
Minnesota Pollution Control Agency

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**NOTICE TO THE PERMITTEE:**

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

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

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

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

**PERMIT SHIELD:**

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

**FACILITY DESCRIPTION:**

The facility covered by the proposed permit, Air Emissions Permit No. 01300015-001, Northern States Power Company, d/b/a Excel Energy - Key City/Wilmarth is an electric power generating station located along the Minnesota River in Mankato Minnesota. The Wilmarth plant is rated at 25 megawatts (MW) and has two boilers that primarily burn Refuse Derived Fuel (RDF). The Key City plant is rated at 80 MW and has four turbine/generator sets that burn natural gas. The RDF burned at this facility is processed under contract with the Elk River Resource Recover Facility in Elk River, Minnesota; Ramsey/Washington Resource Recovery Facility in Newport, Minnesota; the Prairieland Compost Facility in Truman, Minnesota and Minnesota Waste Processing Company (MWPC) located on-site.

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 to 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 distillate fuel oil. Natural gas is used at start-up and as necessary to maintain proper combustion conditions. The boilers were installed in 1947 and converted to burn RDF in 1985.

Each boiler exhausts through separate pollution control equipment, a scrubber for the control of acid gasses and a baghouse for the control of Particulate Matter (PM) and a 158 ft. tall stack. Exhaust gasses from each boiler are continuously monitored for carbon monoxide, sulfur dioxide, nitrogen oxides, opacity, and oxygen. 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. A diesel fuel fired generator provides emergency electrical power.

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 Wilmarth RDF Ash Landfill. Other sources of PM emissions are the lime storage silo and RDF receiving building and RDF transfer station.

Electrical energy is also produced at this facility by four 20 MW gas turbines (EU004, EU005, EU006, and EU007). These units were installed in 1971 and are intended to provide peaking capacity. The primary fuel burned is natural gas; distillate fuel is used as the backup fuel. The facility has two 1,000,000-gallon fuel oil tanks.

**Administrative Amendment (Action 002):** This amendment changed the deadline for HCl emissions testing for boilers 1 and 2.

**Administrative Amendment (Action 003):** This amendment changed the deadline for submittal of a fractional analysis, and made minor changes to the appendices.

**Major Amendment (Action 004):** Changes made through this permit action include the following:

1. Wood is listed as an allowed fuel. Wood was allowed by permits pre-dating the Title V permit, and emissions from wood combustion were included in the calculations for the Title V permit, but wood was not listed in the permit as an allowed fuel. Because the emission calculations included wood combustion, exclusion of wood from the list was a typographical error. Allowing wood to be burned does not result in any changes to the potential emissions listed in the technical support document or public notice for the original Title V permit. This change alone would qualify as insignificant.
2. Clarification was added regarding when the waste combustor rules (Minn. R. 7011.1227, 7011.1228, and 7011.1240) apply, and when the standards of performance for indirect heating equipment (Minn. R. 7011.0510) apply. The standards of Minn. R. 7011.0510 were added to Table A. This change alone would qualify as insignificant.
3. The lime storage silo (EU015) was added back into the permit as an emission unit. It was erroneously listed as an insignificant activity in the original Title V permit. The applicable requirements do not change. This change in permit format alone would qualify as insignificant.
4. The requirement to test the opacity of fugitive emissions from the RDF transfer station, conveyor, and unloading operations on an annual basis was eliminated from the permit. These operations are, and were originally listed as, insignificant activities. Since the premise behind an activity being "insignificant" is that the emissions are not of significant concern, the underlying assumption must be that the emissions are less than those allowed by the applicable requirements. That is the case for these activities. Furthermore, the test method specified in the Title V permit (Method 22) is merely a test of whether or not there are fugitive emissions; it does not result in an opacity percentage

to be compared to the limit in the applicable requirement. Visual observations of the areas and correction of problems are done by plant personnel on a monthly basis (much more frequently than the annual Method 22 test). Although the operations to which this change applies are insignificant activities, this change alone would require a major amendment, because requirements are being removed from the permit but the units and emissions to which they applied remain.

5. Replaced Appendix II (RDF Transfer Station and Unloading Area Housekeeping Plan) with Xcel Energy's revised RDF Transfer Station and Unloading Area Housekeeping Plan. This change applies only to the RDF handling insignificant activities.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

**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.**

<b>Subject Item: Total Facility</b>	
<b>What to do</b>	<b>Why to do it</b>
<b>OPERATIONAL LIMITS</b>	hdr
Operation and/or production limits will be placed on emission units based on operating conditions during performance testing. Limits set as a result of a performance test (conducted before or after permit issuance ) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025.	Minn. R. 7017.2025
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 to 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: Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable by the EPA or Citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
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
Ash Sampling: Conduct ash sampling at least quarterly in accordance with Minn. R. 7035.2910.	Minn. R. 7035.2910, subp. 3
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.	Minn. R. 7007.0801, subp. 2(E)
<b>PLANS</b>	hdr
<b>INDUSTRIAL SOLID WASTE MANAGEMENT PLAN:</b> 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 amended plan to the commissioner for approval.	Minn. R. 7011.1250, subp. 3
Submittal: due 90 days after Permit Issuance (4/29/02) the plans as described below, identifying which required portions are not applicable. Keep the plans with the Operating Manual.  A. security requirements in part 7035.2535, subp. 3; Draft and implement a security plan which describes devices or provisions to prevent unauthorized entry that could lead to injury or disturbance of waste or equipment. B. general inspection requirements in part 7035.2535, subp. 4; Draft and implement a plan which describes inspection schedules and maintenance of inspection records for 5 years. This general inspection plan covers those operations which, if malfunctions occur, could lead to environmental or human health hazards.	Minn. R. 7011.1245 A to H
Submittal: due 90 days after Permit Issuance (4/29/02) (Continued) C. household hazardous waste management requirements of part 7035.2535, subp. 6; keep the household hazardous waste management plan prepared for each refuse derived fuel (RDF) provider, on file at the facility. D. emergency preparedness and prevention plans and emergency procedures shall be prepared in accordance with parts 7035.2595 and 7035.2605; Update the existing Chemical Emergency Episode Plan to comply with the requirements in 7035.2595 and 7035.2605 as applicable. E. contingency action plans in part 7035.2615; Include as a part of the update to the existing Chemical Emergency Episode Plan, the applicable items of 7035.2615 F. closure plans and procedures in part 7035.2625. G. not applicable. H. infectious waste management plan (if Permittee chooses to accept infectious waste), in accordance with Minn. R. 7035.9100 to 7035.9150.	Minn. R. 7011.1245 A to H, (Continued)
Submittal: due 90 days after Permit Issuance (4/29/02) a plan for handling waste that has not been processed into refuse derived fuel (RDF).	Minn. R. 7007.0800, subp. 2.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

Submittal: due before 12/31/2003, 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. 2A. The Waste Composition Study and Sample Analysis Report is due 45 days after the end of each five years starting from 12/1998.	Minn. R. 7011.1270 A. (6)
Fugitive Control Plan: due 60 days after Permit Issuance (4/29/02). The plan shall identify all fugitive emission sources, primary and contingent control measures, and recordkeeping. Permittee shall follow the actions and recordkeeping specified in the control plan.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. 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 Sampling Plan: Submit ash sampling plan and amendments to the plan to the Regular Facilities Unit in the Rochester Subdistrict Office for approval. The plan must contain the information in Minn. R. 7035.2910, subp. 6A - H.	Minn. R. 7007.0801, subp. 2(D); Minn. R. 7035.2910, subp. 6
<b>POLLUTION CONTROL EQUIPMENT</b>	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
Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown or as soon as possible after an unplanned shutdown of any process or control equipment, if the shutdown would cause an increase in the emission of any regulated air pollutant. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.  Exceptions to this requirement are described in Minn. R. 7019.1000, subp. 3.	Minn. R. 7019.1000, subp. 3
Breakdowns: Notify the Commissioner within 24 hours after a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emission of any regulated air pollutant. At the time of notification or as soon thereafter as possible, the permittee shall also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over.  Exceptions to this requirement are described in Minn. R. 7019.1000, subp. 2.	Minn. R. 7019.1000, subp. 2
<b>TESTING REQUIREMENTS</b>	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
General Performance Test Requirements:  Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.  PT Notifications (written): due 30 days before each Performance Test PT Plan: due 30 days before each Performance Test PT Pre-test Meeting: due 7 days before each Performance Test PT Report: due 45 days after each Performance Test PT Report-Microfiche: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 104 and Minn. R. 7017.2035, subp. 1-2.
<b>MONITORING REQUIREMENTS</b>	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)
Monitoring Equipment Calibration: Calibrate all required monitoring equipment according to manufacturer's recommendations (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a combustion 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)
<b>RECORDKEEPING</b>	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

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 site for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
REPORTING/MISCELLANEOUS	hdr
Initial Notification of Deviations Endangering Human Health or the Environment: Immediately after discovery, notify orally or by facsimile, the Commissioner or State Duty Officer, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Deviations Report: due 2 days after Discovery of Deviation. Submit a written description of any deviations endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Semiannual Deviations Report: due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by NSP Wilmarth 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. Use of the Quarterly EER is permitted for Deviations Report Form-1.	Minn. R. 7007.0800, subp. 6(A)
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)
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.	Minn. R. 7007.0800, subp. 6 (C).
Submittal, due 90 days after Permit Issuance, a fractional analysis of the waste stream from which the refuse derived fuel (RDF) is produced as described in Minn. R. 7007.0501, subp 2(A)(1) including a measurement of the noncombustible fraction of solid waste.	Minn. R. 7007.0801, subp. 2(C)
Submittal: due 73 days after end of each calendar year following Permit Issuance an Ash Testing Report. Submit the 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. 10A - F.	Minn. R. 7035.2910, subp. 10
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.	Minn. R. 7019.3000 through Minn. R. 7019.3010.
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Submit: due 1095 days after 04/29/2002, Modeling Protocol. This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, App. W, and with MPCA modeling guidance for Title V air dispersion modeling analysis. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 2



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

Submit: due 1460 days after 04/29/2002 , Modeling Study results. Results are to be submitted after the MPCA has reviewed and approved the modeling protocol, and should adhere to MPCA modeling guidance for Title V air dispersion modeling analysis. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.

Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

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

EU 002 Boiler #2

What to do	Why to do it
OPERATIONAL LIMITS/REQUIREMENTS	hdr
Permittee shall comply with the applicable parts of Minn. R. 7011.1201 to 7011.1290.	Minn. R. 7011.1215, subp. 1
OPERATING TRAINING & CERTIFICATION	hdr
Operating Manual: Within 180 days after Permit Issuance the Permittee shall develop and maintain the Operating Manual in accordance with Minn. R. 7011.1275, subp. 3, items A through O and update the manual following each performance test to include operational changes resulting from emissions performance testing results. Also, include the revision dates within the Operating Manual; store the Operating Manual in a location easily accessed by staff; and describe the location in the Operating Manual. Make all attempts to have this location be permanent.	Minn. R. 7011.1275, subp. 3; Minn. R. 7007.0800, subp. 2
Training Program: Implement a training program, based on the Operating Manual, designed to maintain compliance with this permit and Minnesota 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.	Minn. R. 7011.1275; Minn. R. 7007.0800, subp. 2
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.  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.	Minn. R. 7011.1275, subp. 1(A); Minn. R. 7011.1275, subp. 1(D); Minn. R. 7011.1275, subp. 1(B); Minn. R. 7007.0800, subp. 2
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.	Minn. R. 7011.1275, subp. 1(C)
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, 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. 4, item A.	Minn. R. 7011.1275, subp. 1; Minn. R. 7011.1275, subp. 2; Minn. R. 7011.1275, subp. 4
Certified Operator: Comply with the certified operator requirements below. The permittee shall: display documents of full certification prominently at the facility; keep copies of the certificates in the Operating Record; record certified operator shift changes in the Operating Record; maintain time records for all certified operators; allow the Commissioner to review all records related to the full certification of operators, including the facility's program for the examination and certification of operators, the required records, the content of examinations, and the results of an individual's examination.  A current record of all personnel who have obtained provisional and/or full certification by ASME or other approved course work shall be kept at the facility.	Minn. R. 7011.1284, subp. 3; Minn. R. 7011.1284, subp. 3a
Certified Operator: 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.	Minn. R. 7011.1284, subp. 4
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.	Minn. R. 7011.1240, subp. 1; Minn. R. 7011.1280, subp. 3; Minn. R. 7011.1281
RECORDKEEPING	hdr
Recordkeeping: 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.	Minn. R. 7011.1285, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

<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>C. the weight of RDF combusted;</p> <p>C1. the number of gallons of waste oil burned per hour;</p> <p>C2. the hour each quantity of waste oil was burned;</p> <p>C3. the source of 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>Minn. R. 7011.1285, subp. 2</p> <p>Minn. R. 7007.0800, subp. 2</p>
<p>Daily Operating Record (Continued)</p> <p>G. results of performance tests conducted on waste combustor units as required in part 7011.1270;</p> <p>H. instances of dumpstack use;</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, boiler steam flow, particulate matter control device temperature) and a description of corrective actions taken; and</p> <p>L. the date of the calibration of all signal conversion elements associated with boiler steam flow monitoring as required in Minn. R. 7011.1265, subp. 4.</p>	<p>Minn. R. 7011.1285, subp. 2 ;</p> <p>Minn. R. 7000.7000;</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>40 CFR Section 60.7(b), 40 CFR Section 60.1</p>
<p>Archiving: Retain all continuously measured emission records for a minimum of five years. Regarding boiler load level monitoring, 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. 7011.1285, subp. 1</p> <p>Minn. R. 7007.0800, subp. 2</p>
<p>REPORTING</p>	<p>hdr</p>
<p>Notify: due 10 days before Initial Startup of EU001 and/or EU002.</p>	<p>Minn. R. 7011.1240, subp. 9</p>
<p>Reporting of Exceedances of Continuously Monitored Emissions: If accurate and valid data results collected from the sulfur dioxide, carbon dioxide, and/or nitrogen oxide monitors exceed emission limits, the following procedures shall be followed.</p> <p>(1) Exceedance shall be reported to the commissioner as soon as reasonably possible.</p> <p>(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.</p> <p>(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 scheduled.</p>	<p>Minn. R. 7011.1260, subp. 7</p>
<p>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.</p>	<p>Minn. R. 7017.1110, subp. 1 and 2; Minn. R. 7011.1285, subp. 3.</p>
<p>Quarterly Report: due 30 days after end of each calendar quarter following Permit Issuance</p>	<p>Minn. R. 7011.1285, subp. 3</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

<p>Quarterly Reports (Continued): The report shall contain the following items:</p> <p>A. calendar date;</p> <p>B. a graphic or tabular presentation of the sulfur dioxide, nitrogen oxide, and carbon monoxide emissions, the maximum or minimum waste combustor unit load level and particulate matter control device temperatures as required 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:</p> <p>(1) the graph shall represent one operating parameter or pollutant;</p> <p>(2) the applicable limit of the parameter or pollutant shall be indicated on the graph; and</p> <p>(3) data shall be expressed in the same units as the applicable operating parameter or emissions limit;</p> <p>C. instances of dumpstack use;</p>	Minn. R. 7011.1285, subp. 3 (Continued)
<p>Quarterly Reports (Continued):</p> <p>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), 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;</p> <p>E. the percent of the operating time for the quarter that the opacity COMS was operating and collecting valid data;</p> <p>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 (if applicable) or the opacity level have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;</p>	Minn. R. 7011.1285, subp. 3 (Continued)
<p>Quarterly Reports (Continued)</p> <p>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.</p> <p>H. the information required in Minn. R. 7011.1285, subp 2(C), (D), and (E), summarized to reflect quarterly totals; and</p> <p>I. a compliance certification as required in Minn. R. 7007.0800, subp 6(C).</p> <p>J. if an additive is used to comply with the mercury or PCDD/PCDF emission limits, the total quantity of additive used during the calendar quarter, as specified in Minn. R. 7011.1272, subp. 3(B), with supporting calculations.</p>	Minn. R. 7011.1285, subp. 3 (Continued)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

**Subject Item:** GP 003 Gas Turbine**Associated Items:** EU 004 Gas Turbine/Generator

EU 005 Gas Turbine/Generator

EU 006 Gas Turbine/Generator

EU 007 Gas Turbine/Generator

What to do	Why to do it
Opacity: less than 20 percent once operating temperature is attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Performance Test: due 180 days after 04/29/2002 for opacity on one representative unit	Minn. R. 7017.2020, subp. 1
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight . Permittee shall obtain and maintain a fuel supplier receipt for each shipment of distillate fuel oil delivered certifying that the shipment complies with ASTM specifications for distillate fuel oil and that the sulfur content is less than or equal to 0.5 % by weight as determined by ASTM method D 1552 or in accordance with the current ASTM method.	Minn. R. 7000.0800, sub. 2
Initial Performance Test: due 180 days after Resuming Operation on distillate fuel oil by any emission unit in GP 003, to measure opacity of each emission unit in GP 003  For additional applicable performance test requirements, see "General Performance Test Requirements" in Table A, Subject Item "Total Facility."	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

**Subject Item:** GP 004 Bag Houses**Associated Items:** CE 002 Fabric Filter - High Temperature, i.e., T>250 Degrees F

CE 004 Fabric Filter - High Temperature, i.e., T&gt;250 Degrees F

What to do	Why to do it
Temperature: less than or equal to 30 degrees F above the highest 4-hour arithmetic mean temperature measured during four consecutive hours for this gas stream during the most recent performance test for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans that demonstrated compliance when solid waste is being combusted except during the annual PCDD/PCDF performance and the two weeks prior to this test as limited below.	Minn. R. 7011.1240, subp. 2 Minn. R. 7000.7000 Minn. R. 7007.0800, subp. 2
During the annual PCDD/PCDF performance test and the two weeks prior to this test, no particulate matter control device operating temperature limitations are applicable. The commissioner shall waive the particulate matter control device temperature limits for the purpose evaluating system performance, URGE testing, 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 temperature limit can be waived; 3) the length of time the project will take to complete.	Minn. R. 7011.1240, subp. 2 Minn. R. 7000.7000 Minn. R. 7007.0800, subp. 2 (continued)
Particulate Matter Control Device Temperature Monitoring Averaging Period: The averaging period for the particulate matter control device inlet flue gas temperature monitor shall be a four-hour arithmetic block average calculated from four continuous one-hour arithmetic averages.	Minn. R. 7011.1260, subp. 4 Minn. R. 7000.7000 Minn. R. 7007.0800, subp. 2
Calibrate the pressure gauge as required by manufacturing specifications but no less frequent than annually and before each PCDD/PCDF test. Maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

**Subject Item:** EU 001 Boiler #1**Associated Items:** CE 001 Gas Scrubber (General, Not Classified)

CE 002 Fabric Filter - High Temperature, i.e., T&gt;250 Degrees F

GP 001 Waste Combustors

MR 001

MR 002

MR 003 Inlet

MR 004 Inlet

MR 005 Outlet

MR 006 Outlet

MR 007

MR 015

MR 016

SV 001

What to do	Why to do it
EMISSION LIMITS AND COMPLIANCE SCHEDULES	hdr
<p>Applicability of Standards: the standards of Minn. R. 7011.1227, 7011.1228 and 7011.1240, subp. 2, and the emission limits and control device inlet temperatures established in this permit pursuant to Minn. R. 7011.1215 - 7011.1265, 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 fuels other than RDF are being burned.</p>	Minn. R. 7011.1215, subp. 4
<p>(continued from above)</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"> <li>- continuously monitor and record the grate speed after RDF feed has stopped, until the fuel switch from RDF is complete</li> <li>- calculate, at least once per minute, the distance traveled since RDF feed stopped</li> <li>- sum the calculated distances</li> </ul> <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>	Minn. R. 7011.1215, subp. 4 (continued from above)
<p>Applicability of Standards: Permittee shall not cause to be emitted into the atmosphere from EU001 gases in excess of the standards of performance shown in Minn.R. 7011.1227, 7011.1228. Emissions (except for opacity) shall be calculated under standard conditions corrected to seven percent oxygen on a dry volume basis.</p>	Minn. R. 7011.1225, subp. 1(A)
<p>Percent reduction limits must be verified by simultaneously conducting inlet and outlet testing.</p>	Minn. R. 7007.0800, subp. 2
<p>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.</p>	Minn. R. 7011.1225, subp. 1(B)
<p>Front-half Particulate Matter: less than or equal to 0.012 grains/dry standard cubic foot, front-half, corrected to seven percent oxygen as determined by performance test in accordance with Minn. R. 7011.1265.</p>	Minn. R. 7011.1227, Table 1, Minn. R. 7011.1225, subp. 1; Minn. R. 7011.1265

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot , total, corrected to seven percent oxygen as determined by performance test in accordance with Minn. R. 7011.1265.	Minn. R. 7011.1227, Table 1; Minn. R. 7011.1225, subp. 1; Minn. R. 7011.1265;
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input (applies when burning fuels other than RDF)	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 10 percent opacity using a six-minute average, calculated using 36 or more data points equally spaced over a six-minute period	Minn. R. 7011.1227, Table 1; Minn. R. 7011.1260, subp. 4(F)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity (applies when burning fuels other than RDF)	Minn. R. 7011.0510, subp. 2
Sulfur Dioxide Emissions: SO <sub>2</sub> emission concentration shall be determined by SO <sub>2</sub> continuous emissions monitor in accordance with Minn. R. 7011.1260, subp 4a(A).	Minn. R. 7011.1260, subp 4a(A)
SO <sub>2</sub> Limit: Whichever is less stringent of the following:1) 75 percent reduction of sulfur dioxide; or 2) a concentration, corrected to seven percent oxygen, of Sulfur Dioxide: less than or equal to 29 parts per million using 24-hour Geometric Average	Minn. R. 7011.1227, Table 1
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input when burning solid fuel other than RDF	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input when burning liquid fuel	Minn. R. 7011.0510, subp. 1
CO Limit: A concentration corrected to 7 percent oxygen, of Carbon Monoxide: less than or equal to 200 parts per million using 24-hour Block Average	Minn. R. 7011.1227, Table 1
Carbon Monoxide Emissions: CO emission concentrations shall be determined by CO continuous emissions monitors in accordance with Minn. R. 7011.1260.	Minn. R. 7007.0800, subp. 2
Nitrogen oxides at a concentration corrected to 7 percent oxygen less than or equal to 230 ppmv when averaged over all combustor units or, for each individual unit a concentration corrected to seven percent oxygen, of Nitrogen Oxides: less than or equal to 250 parts per million using 24-hour Block Average	Minn. R. 7011.1228; Minn. R. 7011.1260, subp. 4. E.
Nitrogen Oxides Emissions: NO <sub>x</sub> emission concentrations shall be determined by NO <sub>x</sub> continuous emissions monitor in accordance with Minn. R. 7011.1260, subp 4a(B).	Minn. R. 7011.1260, subp 4a(B)
Nitrogen Oxides Emissions Averaging: Before Permittee may implement emissions averaging to demonstrate compliance with the nitrogen oxides emission limit, 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.	Minn. R. 7011.1228
Lead: less than or equal to 440 micrograms/DSCM corrected to seven percent oxygen as determined in accordance with Minn. R. 7011.1265, subp. 3(C).	Minn. R. 7011.1227, Table 1
Muni Waste Combust Organics: less than or equal to 30 nanograms/DSCM corrected to seven percent oxygen, measured as Total PCDD/PCDF as determined in accordance with Minn. R. 7011.1265, subp. 3(B).	Minn. R. 7011.1227, Table 1
Cadmium compounds: less than or equal to 40 micrograms/DSCM measured as cadmium, corrected to 7% oxygen as determined in accordance with Minn. R. 7011.1265, subp. 3(C).	Minn. R. 7011.1227, Table 1
Performance Test: due 90 days after 04/29/2002 for HCl.	Minn. R. 7007.0800, subp. 2
For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	
HCl Limit: Whichever is less stringent of the following:1) 95 percent reduction of hydrochloric acid; or 2) a concentration, corrected to seven percent oxygen, of Hydrochloric acid: less than or equal to 29 parts per million using 1-Hour Average	Minn. R. 7011.1227, Table 1
Hydrochloric Acid Emissions: HCl emission concentration shall be determined by HCl performance testing in accordance with Minn. R. 7011.1265, subp. 3. A.	Minn. R. 7011.1265, subp. 3. A.
Mercury: less than or equal to 50 micrograms/DSCM corrected to seven percent oxygen; or 85% removal (short term), whichever is less stringent as determined in accordance with Minn. R. 7011.1265, subp. 3(C) and 3(D).	Minn. R. 7011.1227, Table 1
Mercury: less than or equal to 30 micrograms/DSCM corrected to seven percent oxygen; or 85% removal (long-term), whichever is less stringent as determined in accordance with Minn. R. 7011.1265, subp. 3(C) and 3(D).	Minn. R. 7011.1227, Table 1
AVERAGING PERIODS	hdr



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

<p>Averaging Periods: For emission limits or operational limits which are monitored continuously the following averaging periods shall be used:</p> <p>A) for particulate matter control device inlet temperature monitoring, four-hour arithmetic block averages calculated from four continuous one-hour arithmetic averages.</p> <p>B) for unit load, a four-hour arithmetic block average</p> <p>C) the averaging period for carbon monoxide shall be a daily 24-hour arithmetic average measured between 12 midnight and the following midnight. The 24-hour average shall be calculated from one-hour arithmetic averages. At least four points equally spaced in time shall be used to calculate each one-hour average. Each one-hour average shall be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system.</p>	Minn. R. 7011.1260, subp. 4
<p>Averaging Periods (continued)</p> <p>D) for SO<sub>2</sub>, the geometric average of the 1-hour arithmetic average emission rates concentration during each 24-hour daily period measured from midnight to midnight. 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 % O<sub>2</sub> on an hourly basis using the one-hour arithmetic average of the O<sub>2</sub> or CO<sub>2</sub> continuous emissions monitoring system;</p> <p>E) for NO<sub>x</sub>, the arithmetic average of the 1-hour arithmetic average emission rates concentration during each 24-hour daily period measured from midnight to midnight. 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 % O<sub>2</sub> on an hourly basis using the 1-hour arithmetic average of the O<sub>2</sub> or CO<sub>2</sub>;</p> <p>F) For opacity, a 6-minute average, calculated using 36 or more data points equally spaced over a 6-minute period.</p>	Minn. R. 7011.1260, subp. 4 (continued)
<p>Sulfur dioxide emissions average calculation. Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, section 5.4, as amended, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration. Method 19, section 4.3, as amended, shall be used to determine the daily geometric average sulfur dioxide emission concentration using a continuous emission monitor. From these data, a 24-hour daily geometric mean emission concentration and daily geometric mean percent reduction shall be calculated using Method 19, sections 4.3 and 5.4, as amended, as applicable.</p>	Minn. R. 7011.1260, subp. 4a
<p>Nitrogen oxides emissions calculations. Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, section 4.1, as amended, shall be used for determining the daily arithmetic average nitrogen oxides emission concentration by using a continuous emission monitor. From these data, a 24-hour daily arithmetic average emission concentration shall be calculated using Method 19, section 4.1, as amended.</p>	Minn. R. 7011.1260, subp. 4a
<p><b>OPERATIONAL LIMITS/REQUIREMENTS</b></p>	hdr
<p>Start-up on RDF Prohibited: During start-up from a cold furnace, use auxiliary fuel to achieve combustion chamber operating temperature.</p>	Minn. R. 7011.1240. subp. 3
<p>Auxiliary Fuel Use: Use natural gas to 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.</p>	Minn. R. 7007.0800, subp. 2
<p>Maximum Demonstrated Capacity: Permittee shall not operate the waste combustor at a level above 110 percent of the maximum demonstrated capacity of the combustion system as determined during the last PCDD/PCDF performance test without conducting a performance test to establish a new maximum demonstrated capacity under part 7011.1265, (or as specified by Minn. R. 7011.1201, subp. 32) which demonstrates compliance with the emission limitations of 7011.1225 except during the annual PCDD/PCDF performance test and the two weeks prior to this test as limited below.</p>	Minn. R. 7011.1240, subp. 5
<p>During the annual PCDD/PCDF performance test and the two weeks prior to this test, no waste combustor load limitations are applicable. The commissioner shall waive the waste combustor load limits for the purpose of evaluating system performance, URGE testing, 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:</p> <ol style="list-style-type: none"> <li>1) a description of the proposed project, and the outcome the project is designed to evaluate;</li> <li>2) how the project conforms with the activities described above for which the waste combustor load limit can be waived;</li> <li>3) the length of time the project will take to complete.</li> </ol>	Minn. R. 7011.1240, subp. 5 (continued)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

<p>Allowed and Prohibited Fuels: The waste combustor may burn natural gas, wood, distillate fuel oil, used oil generated on site, RDF as defined in Minn. Stat. 115A.03, subp. 21, and other nonhazardous wastes approved through the facility's Industrial Waste Management Plan, except as noted elsewhere in Table A.</p> <p>Used oil shall be burned at a rate no greater than 180 gallons per hour. Used oil means on-specification used oil as defined in Minn. R. 7045.0020, subp.60a and the sorbents that hold the used oil.</p> <p>Permittee shall not combust yard waste or tires.</p>	<p>Minn. R. 7011.1220, subp.2; Minn. R. 7007.0800, subp. 2</p>
<p>Facility Operation: Properly maintain and operate air pollution control equipment at all times when the waste combustor is in operation. By-pass of the particulate matter pollution control equipment is allowed only during periods of start-up while combusting only natural gas.</p>	<p>Minn. R. 7007.0800, subp. 16(J)</p>
<p>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.</p>	<p>Minn. R. 7017.1210</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>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; results 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.</p>	<p>Minn. R. 7017.1130</p>
<p>Recordkeeping: Permittee will maintain a record of continuously measured parameters, as specified in Minn. R. 7011.1260, subp. 6.</p>	<p>Minn. R. 7011.1260, subp. 6; Minn. R. 7007.0800, subp. 2</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>Recordkeeping: record in the daily operating record:</p> <ol style="list-style-type: none"> <li>1) the time when RDF begins feeding and the unit load of the steam turbine at that time,</li> <li>2) the time when the RDF feed to the combustion chamber ceases,</li> <li>3) the time when pm control equipment bypass begins, and</li> <li>4) the time when pm control equipment bypass ceases.</li> </ol>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Recordkeeping:</p> <p>Record in the daily operating record:</p> <ol style="list-style-type: none"> <li>1) the quantity of waste oil burned on a gallon per hour basis;</li> <li>2) the hours of the day that the waste oil is burned; and</li> <li>3) the source of the waste oil.</li> </ol>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Recordkeeping: record time when use of auxiliary fuel begins and is discontinued.</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 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>MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Continuous Monitoring: Permittee shall install and operate monitors that continuously read and record:</p> <ol style="list-style-type: none"> <li>a) unit load level as determined through steam flow measurement</li> <li>b) oxygen concentrations at each location where CO, SO<sub>2</sub> and NO<sub>x</sub> emissions are monitored.</li> <li>c) temperatures of the flue gas at the inlet of each particulate matter control device.</li> </ol>	<p>Minn. R. 7011.1260, subp. 3; Minn. R. 7011.1265, subp. 4</p>
<p>Installation Notification: due 60 days before installing the COMS/CEMS. Install the CEMS according to the procedures in 40 CFR Appendix B.</p>	<p>Minn. R. 7017.1040, subp. 1; Minn. R. 7011.1260, subp. 3</p>
<p>CEMS Installation: Permittee shall install and operate CEMS for each of the following pollutants: CO, NO<sub>x</sub>, and SO<sub>2</sub>.</p>	<p>Minn. R. 7011.1260, subp. 3</p>
<p>Emissions Monitoring: The owner or operator shall use a CEMS to measure NO<sub>x</sub>, SO<sub>2</sub> and CO emissions from this emission unit. The owner or operator shall use a COMS to measure opacity emissions from this emission unit.</p>	<p>Minn. R. 7011.1260, subp. 3; Minn. R. 7017.1006</p>
<p>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.</p>	<p>Minn. R. 7011.1260, subp. 5(G)</p>
<p>COMS installation: Permittee shall install and operate a continuous opacity monitoring system (COMS).</p>	<p>Minn. R. 7011.1260, subp. 3</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

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; Minn. R. 7007.0800, subp. 2
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. 7011.1260, subp. 5(B); Minn. R. 7017.1090, subp. 1; Minn. R. 7007.0800, subp. 2
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.	
CEM/COMS Certification Test: due 90 days after first Excess Emissions Report. This requirement applies to any CEMS which have not previously been certified.	Minn. R. 7017.1050, subp. 1 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Plan: due 30 days before CEM/COM Certification Test	Minn. R. 7017.1060, subp. 1 and 2 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Pretest Meeting: due 7 days before CEM/COMS Certification Test	Minn. R. 7017.1060, subp. 3 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Report: due 45 days after CEM/COMS Certification Test	Minn. R. 7017.1080, subp. 1, 2, and 4 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Report - Microfiche Copy: due 105 days after CEM/COMS Certification Test	Minn. R. 7017.1080, subp. 3 and Minn. R. 7007.0800, subp. 2
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily from each COMS according to the procedures listed in 40CFR 60.13.	Minn. R. 7011.1260, subp. 5(E); Minn. R. 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 40CFR 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 calendar half-year starting 04/29/2002. Conduct audits at least 3 months apart but no greater than 8 months apart. Follow the procedures of 40CFR 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; Minn. R. 7007.0800, subp. 2
Cylinder Gas Audit: 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 calendar 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.
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
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

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

Operation during performance testing. Permittee shall report to the commissioner the operating conditions including 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
Exceedance of emission limits: If accurate and valid data results from a performance test demonstrate an exceedance of a standard as set forth in this permit for EU001, Permittee shall undertake the following actions: A. report the exceedance as soon as reasonably possible giving considerations to matters of plant or worker safety, or access to communications and the applicable reporting provisions of Minn. R. 7007.0800, subp. 6; B. within 60 days of the report of the initial exceedance, conduct a performance test and submit the results to the commissioner to demonstrate compliance with this permit; C. If Permittee does not demonstrate compliance within 60 days of the initial report of the exceedance, shut down EU001 on the 61st day;	Minn. Stat. 116.85, subd 3.
D. EU001 may then be restarted solely to conduct performance testing after Permittee has notified the commissioner in writing of the date on which Permittee plans to restart operation of EU001. Notification must be at least 10 days in advance of the date EU001 will resume operation. The notice must state the date performance testing will be conducted. E. Notwithstanding item D, if shutdown under item C is required, EU001 may be restarted after demonstrating compliance and upon approval by the commissioner.	Minn. R. 7011.1265, subp. 11; M.S. 116.85, subd 3. (continued)
Initial Performance Test: due 180 days after Initial Startup but not to exceed 60 days after achieving the maximum production rate at which the affected facility will be operated to measure front-half PM, Total PM, Total PCDD/PCDF, Opacity, Cd, HCl, Hg, and Pb emissions. Fugitive emissions from the ash conveying system, or buildings or enclosures of ash conveying systems, including conveyor transfer points, must also be conducted.  For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	Minn.R. 7017.2020, subp. 1
Performance Test: due before end of each year following Initial Performance Test to measure front-half PM, Total PM, Total PCDD/PCDF, Opacity, Cd, HCl, Hg, Pb fugitive particulate emissions. A year is defined as 12 months. The tests shall be conducted at an interval not to exceed 12 months between test dates.  For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".  If Permittee meets the criteria for decreased testing, per Minn. R. 7011.1270, the Permittee shall submit a notification stating 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 permit criteria are met for less frequent testing, the test plan, pre-test meeting, test report, and microfiche copy of the test report requirements are waived for that yearly test	Minn. R. 7017.2020, subp. 1 Minn. R. 7011.1270(A); Minn. R. 7000.7000; Minn. R. 7017.2030, subp. 1; Minn. R. 7007.0800, subp. 2
Permittee shall conduct performance tests as described below:  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.	Minn. R. 7017.2020, subp. 1 Minn. R. 7011.1270
Hg test frequency: If a test shows that an emission limit for mercury from EU001 is exceeded, the commissioner shall require testing every three months thereafter until compliance with the standard is demonstrated.	Minn. R. 7017.2020, subp. 1; Minn. R. 7011.1270; Minn. R. 7011.1265, subp.(A)(5)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

**Subject Item:** EU 002 Boiler #2**Associated Items:** CE 003 Gas Scrubber (General, Not Classified)

CE 004 Fabric Filter - High Temperature, i.e., T&gt;250 Degrees F

GP 001 Waste Combustors

MR 008

MR 009

MR 010 Inlet

MR 011 Inlet

MR 012 Outlet

MR 013 Outlet

MR 014

MR 017

MR 018

SV 002

What to do	Why to do it
EMISSION LIMITS AND COMPLIANCE SCHEDULES	hdr
<p>Applicability of Standards: the standards of Minn. R. 7011.1227, 7011.1228 and 7011.1240, subp. 2, and the emission limits and control device inlet temperatures established in this permit pursuant to Minn. R. 7011.1215 - 7011.1265, 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 fuels other than RDF are being burned.</p>	Minn. R. 7011.1215, subp. 4
<p>(continued from above)</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"> <li>- continuously monitor and record the grate speed after RDF feed has stopped, until the fuel switch from RDF is complete</li> <li>- calculate, at least once per minute, the distance traveled since RDF feed stopped</li> <li>- sum the calculated distances</li> </ul> <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>	Minn. R. 7011.1215, subp. 4 (continued from above)
<p>Applicability of Standards: Permittee shall not cause to be emitted into the atmosphere from EU002 gases in excess of the standards of performance shown in Minn.R. 7011.1227, 7011.1228. Emissions (except for opacity) shall be calculated under standard conditions corrected to seven percent oxygen on a dry volume basis.</p>	Minn. R. 7011.1225, subp. 1(A)
<p>Percent reduction limits must be verified by simultaneously conducting inlet and outlet testing.</p>	Minn. R. 7007.0800, subp. 2
<p>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.</p>	Minn. R. 7011.1225, subp. 1(B)
<p>Front-half Particulate Matter: less than or equal to 0.012 grains/dry standard cubic foot, front-half, corrected to seven percent oxygen as determined by performance test in accordance with Minn. R. 7011.1265.</p>	Minn. R. 7011.1227, Table 1, Minn. R. 7011.1225, subp. 1; Minn. R. 7011.1265

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot , total, corrected to seven percent oxygen as determined by performance test in accordance with Minn. R. 7011.1265.	Minn. R. 7011.1227, Table 1; Minn. R. 7011.1225, subp. 1; Minn. R. 7011.1265;
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input (applies when burning fuels other than RDF)	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 10 percent opacity using a six-minute average, calculated using 36 or more data points equally spaced over a six-minute period	Minn. R. 7011.1227, Table 1; Minn. R. 7011.1260, subp. 4(F)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity (applies when burning fuels other than RDF)	Minn. R. 7011.0510, subp. 2
Sulfur Dioxide Emissions: SO <sub>2</sub> emission concentration shall be determined by SO <sub>2</sub> continuous emissions monitor in accordance with Minn. R. 7011.1260, subp 4a(A).	Minn. R. 7011.1260, subp 4a(A)
SO <sub>2</sub> Limit: Whichever is less stringent of the following:1) 75 percent reduction of sulfur dioxide; or 2) a concentration, corrected to seven percent oxygen, of Sulfur Dioxide: less than or equal to 29 parts per million using 24-hour Geometric Average	Minn. R. 7011.1227, Table 1
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input when burning solid fuel other than RDF	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input when burning liquid fuel	Minn. R. 7011.0510, subp. 1
CO Limit: A concentration corrected to 7 percent oxygen, of Carbon Monoxide: less than or equal to 200 parts per million using 24-hour Block Average	Minn. R. 7011.1227, Table 1
Carbon Monoxide Emissions: CO emission concentrations shall be determined by CO continuous emissions monitors in accordance with Minn. R. 7011.1260.	Minn. R. 7007.0800, subp. 2
Nitrogen oxides at a concentration corrected to 7 percent oxygen less than or equal to 230 ppmv when averaged over all combustor units or, for each individual unit a concentration corrected to seven percent oxygen, of Nitrogen Oxides: less than or equal to 250 parts per million using 24-hour Block Average	Minn. R. 7011.1228; Minn. R. 7011.1260, subp. 4. E.
Nitrogen Oxides Emissions: NO <sub>x</sub> emission concentrations shall be determined by NO <sub>x</sub> continuous emissions monitor in accordance with Minn. R. 7011.1260, subp 4a(B).	Minn. R. 7011.1260, subp 4a(B)
Nitrogen Oxides Emissions Averaging: Before Permittee may implement emissions averaging to demonstrate compliance with the nitrogen oxides emission limit, 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.	Minn. R. 7011.1228
Lead: less than or equal to 440 micrograms/DSCM corrected to seven percent oxygen as determined in accordance with Minn. R. 7011.1265, subp. 3(C).	Minn. R. 7011.1227, Table 1
Muni Waste Combust Organics: less than or equal to 30 nanograms/DSCM corrected to seven percent oxygen, measured as Total PCDD/PCDF as determined in accordance with Minn. R. 7011.1265, subp. 3(B).	Minn. R. 7011.1227, Table 1
Cadmium compounds: less than or equal to 40 micrograms/DSCM measured as cadmium, corrected to 7% oxygen as determined in accordance with Minn. R. 7011.1265, subp. 3(C).	Minn. R. 7011.1227, Table 1
Performance Test: due 90 days after 04/29/2002 for HCl.	Minn. R. 7007.0800, subp. 2
For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	
HCl Limit: Whichever is less stringent of the following:1) 95 percent reduction of hydrochloric acid; or 2) a concentration, corrected to seven percent oxygen, of Hydrochloric acid: less than or equal to 29 parts per million using 1-Hour Average	Minn. R. 7011.1227, Table 1
Hydrochloric Acid Emissions: HCl emission concentration shall be determined by HCl performance testing in accordance with Minn. R. 7011.1265, subp. 3. A.	Minn. R. 7011.1265, subp. 3. A.
Mercury: less than or equal to 50 micrograms/DSCM corrected to seven percent oxygen; or 85% removal (short term), whichever is less stringent as determined in accordance with Minn. R. 7011.1265, subp. 3(C) and 3(D).	Minn. R. 7011.1227, Table 1
Mercury: less than or equal to 30 micrograms/DSCM corrected to seven percent oxygen; or 85% removal (long-term), whichever is less stringent as determined in accordance with Minn. R. 7011.1265, subp. 3(C) and 3(D).	Minn. R. 7011.1227, Table 1
AVERAGING PERIODS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

<p>Averaging Periods: For emission limits or operational limits which are monitored continuously the following averaging periods shall be used:</p> <p>A) for particulate matter control device inlet temperature monitoring, four-hour arithmetic block averages calculated from four continuous one-hour arithmetic averages.</p> <p>B) for unit load, a four-hour arithmetic block average</p> <p>C) the averaging period for carbon monoxide shall be a daily 24-hour arithmetic average measured between 12 midnight and the following midnight. The 24-hour average shall be calculated from one-hour arithmetic averages. At least four points equally spaced in time shall be used to calculate each one-hour average. Each one-hour average shall be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system.</p>	Minn. R. 7011.1260, subp. 4
<p>Averaging Periods (continued)</p> <p>D) for SO<sub>2</sub>, the geometric average of the 1-hour arithmetic average emission rates concentration during each 24-hour daily period measured from midnight to midnight. 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 % O<sub>2</sub> on an hourly basis using the one-hour arithmetic average of the O<sub>2</sub> or CO<sub>2</sub> continuous emissions monitoring system;</p> <p>E) for NO<sub>x</sub>, the arithmetic average of the 1-hour arithmetic average emission rates concentration during each 24-hour daily period measured from midnight to midnight. 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 % O<sub>2</sub> on an hourly basis using the 1-hour arithmetic average of the O<sub>2</sub> or CO<sub>2</sub>;</p> <p>F) For opacity, a 6-minute average, calculated using 36 or more data points equally spaced over a 6-minute period.</p>	Minn. R. 7011.1260, subp. 4 (continued)
<p>Sulfur dioxide emissions average calculation. Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, section 5.4, as amended, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration. Method 19, section 4.3, as amended, shall be used to determine the daily geometric average sulfur dioxide emission concentration using a continuous emission monitor. From these data, a 24-hour daily geometric mean emission concentration and daily geometric mean percent reduction shall be calculated using Method 19, sections 4.3 and 5.4, as amended, as applicable.</p>	Minn. R. 7011.1260, subp. 4a
<p>Nitrogen oxides emissions calculations. Code of Federal Regulations, title 40, part 60, Appendix A, Method 19, section 4.1, as amended, shall be used for determining the daily arithmetic average nitrogen oxides emission concentration by using a continuous emission monitor. From these data, a 24-hour daily arithmetic average emission concentration shall be calculated using Method 19, section 4.1, as amended.</p>	Minn. R. 7011.1260, subp. 4a
<p>OPERATIONAL LIMITS/REQUIREMENTS</p>	hdr
<p>Start-up on RDF Prohibited: During start-up from a cold furnace, use auxiliary fuel to achieve combustion chamber operating temperature.</p>	Minn. R. 7011.1240. subp. 3
<p>Auxiliary Fuel Use: Use natural gas to 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.</p>	Minn. R. 7007.0800, subp. 2
<p>Maximum Demonstrated Capacity: Permittee shall not operate the waste combustor at a level above 110 percent of the maximum demonstrated capacity of the combustion system as determined during the last PCDD/PCDF performance test without conducting a performance test to establish a new maximum demonstrated capacity under part 7011.1265, (or as specified by Minn. R. 7011.1201, subp. 32) which demonstrates compliance with the emission limitations of 7011.1225 except during the annual PCDD/PCDF performance test and the two weeks prior to this test as limited below.</p>	Minn. R. 7011.1240, subp. 5
<p>During the annual PCDD/PCDF performance test and the two weeks prior to this test, no waste combustor load limitations are applicable. The commissioner shall waive the waste combustor load limits for the purpose of evaluating system performance, URGE testing, 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:</p> <ol style="list-style-type: none"> <li>1) a description of the proposed project, and the outcome the project is designed to evaluate;</li> <li>2) how the project conforms with the activities described above for which the waste combustor load limit can be waived;</li> <li>3) the length of time the project will take to complete.</li> </ol>	Minn. R. 7011.1240, subp. 5 (continued)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

<p>Allowed and Prohibited Fuels: The waste combustor may burn natural gas, wood, distillate fuel oil, used oil generated on site, RDF as defined in Minn. Stat. 115A.03, subp. 21, and other nonhazardous wastes approved through the facility's Industrial Waste Management Plan, except as noted elsewhere in Table A.</p> <p>Used oil shall be burned at a rate no greater than 180 gallons per hour. Used oil means on-specification used oil as defined in Minn. R. 7045.0020, subp.60a and the sorbents that hold the used oil.</p> <p>Permittee shall not combust yard waste or tires.</p>	<p>Minn. R. 7011.1220, subp.2; Minn. R. 7007.0800, subp. 2</p>
<p>Facility Operation: Properly maintain and operate air pollution control equipment at all times when the waste combustor is in operation. By-pass of the particulate matter pollution control equipment is allowed only during periods of start-up while combusting only natural gas.</p>	<p>Minn. R. 7007.0800, subp. 16(J)</p>
<p>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.</p>	<p>Minn. R. 7017.1210</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>Recordkeeping: Maintain a file of all of the following CEMS and COMS information, in a form suitable for inspection, at facility 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; results 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.</p>	<p>Minn. R. 7017.1130</p>
<p>Recordkeeping: Permittee will maintain a record of continuously measured parameters, as specified in Minn. R. 7011.1260, subp. 6.</p>	<p>Minn. R. 7011.1260, subp. 6; Minn. R. 7007.0800, subp. 2</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>Recordkeeping: record in the daily operating record:</p> <ol style="list-style-type: none"> <li>1) the time when RDF begins feeding and the unit load of the steam turbine at that time,</li> <li>2) the time when the RDF feed to the combustion chamber ceases,</li> <li>3) the time when pm control equipment bypass begins, and</li> <li>4) the time when pm control equipment bypass ceases.</li> </ol>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Recordkeeping:</p> <p>Record in the daily operating record:</p> <ol style="list-style-type: none"> <li>1) the quantity of waste oil burned on a gallon per hour basis;</li> <li>2) the hours of the day that the waste oil is burned; and</li> <li>3) the source of the waste oil.</li> </ol>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Recordkeeping: record time when use of auxiliary fuel begins and is discontinued.</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 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>MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Continuous Monitoring: Permittee shall install and operate monitors that continuously read and record:</p> <ol style="list-style-type: none"> <li>a) unit load level as determined through steam flow measurement</li> <li>b) oxygen concentrations at each location where CO, SO<sub>2</sub> and NO<sub>x</sub> emissions are monitored.</li> <li>c) temperatures of the flue gas at the inlet of each particulate matter control device.</li> </ol>	<p>Minn. R. 7011.1260, subp. 3; Minn. R. 7011.1265, subp. 4</p>
<p>Installation Notification: due 60 days before installing the COMS/CEMS. Install the CEMS according to the procedures in 40 CFR Appendix B.</p>	<p>Minn. R. 7017.1040, subp. 1; Minn. R. 7011.1260, subp. 3</p>
<p>CEMS Installation: Permittee shall install and operate CEMS for each of the following pollutants: CO, NO<sub>x</sub>, and SO<sub>2</sub>.</p>	<p>Minn. R. 7011.1260, subp. 3</p>
<p>Emissions Monitoring: The owner or operator shall use a CEMS to measure NO<sub>x</sub>, SO<sub>2</sub> and CO emissions from this emission unit. The owner or operator shall use a COMS to measure opacity emissions from this emission unit.</p>	<p>Minn. R. 7011.1260, subp. 3; Minn. R. 7017.1006</p>
<p>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.</p>	<p>Minn. R. 7011.1260, subp. 5(G)</p>
<p>COMS installation: Permittee shall install and operate a continuous opacity monitoring system (COMS).</p>	<p>Minn. R. 7011.1260, subp. 3</p>



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

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; Minn. R. 7007.0800, subp. 2
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. 7011.1260, subp. 5(B); Minn. R. 7017.1090, subp. 1; Minn. R. 7007.0800, subp. 2
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.	
CEM/COMS Certification Test: due 90 days after first Excess Emissions Report. This requirement applies to any CEMS which have not previously been certified.	Minn. R. 7017.1050, subp. 1 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Plan: due 30 days before CEM/COM Certification Test	Minn. R. 7017.1060, subp. 1 and 2 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Pretest Meeting: due 7 days before CEM/COMS Certification Test	Minn. R. 7017.1060, subp. 3 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Report: due 45 days after CEM/COMS Certification Test	Minn. R. 7017.1080, subp. 1, 2, and 4 and Minn. R. 7007.0800, subp. 2
CEM/COMS Certification Test Report - Microfiche Copy: due 105 days after CEM/COMS Certification Test	Minn. R. 7017.1080, subp. 3 and Minn. R. 7007.0800, subp. 2
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily from each COMS according to the procedures listed in 40CFR 60.13.	Minn. R. 7011.1260, subp. 5(E); Minn. R. 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 40CFR 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) and Minn. R. 7017.1170, subp. 3
COMS Calibration Error Audit: due before end of each calendar half-year starting 04/29/2002. Conduct audits at least 3 months apart but no greater than 8 months apart. Follow the procedures of 40CFR 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; Minn. R. 7007.0800, subp. 2
Cylinder Gas Audit: 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 calendar 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.
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
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

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

Operation during performance testing. Permittee shall report to the commissioner the operating conditions including 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
Exceedance of emission limits: If accurate and valid data results from a performance test demonstrate an exceedance of a standard as set forth in this permit for EU002, Permittee shall undertake the following actions: A. report the exceedance as soon as reasonably possible giving considerations to matters of plant or worker safety, or access to communications and the applicable reporting provisions of Minn. R. 7007.0800, subp. 6; B. within 60 days of the report of the initial exceedance, conduct a performance test and submit the results to the commissioner to demonstrate compliance with this permit; C. If Permittee does not demonstrate compliance within 60 days of the initial report of the exceedance, shut down EU002 on the 61st day;	Minn. Stat. 116.85, subd. 3
D. EU002 may then be restarted solely to conduct performance testing after Permittee has notified the commissioner in writing of the date on which Permittee plans to restart operation of EU002. Notification must be at least 10 days in advance of the date EU002 will resume operation. The notice must state the date performance testing will be conducted. E. Notwithstanding item D, if shutdown under item C is required, EU002 may be restarted after demonstrating compliance and upon approval by the commissioner.	Minn. R. 7011.1265, subp. 11 (continued)
Initial Performance Test: due 180 days after Initial Startup but not to exceed 60 days after achieving the maximum production rate at which the affected facility will be operated to measure front-half PM, Total PM, Total PCDD/PCDF, Opacity, Cd, HCl, Hg, and Pb emissions. Fugitive emissions from the ash conveying system, or buildings or enclosures of ash conveying systems, including conveyor transfer points, must also be conducted.  For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	Minn.R. 7017.2020, subp. 1
Performance Test: due before end of each year following Initial Performance Test to measure front-half PM, Total PM, Total PCDD/PCDF, Opacity, Cd, HCl, Hg, Pb and fugitive particulate emissions. A year is defined as 12 months. The tests shall be conducted at an interval not to exceed 12 months between test dates.  For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".  If Permittee meets the criteria for decreased testing, per Minn. R. 7011.1270, the Permittee shall submit a notification stating 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 permit criteria are met for less frequent testing, the test plan, pre-test meeting, test report, and microfiche copy of the test report requirements are waived for that yearly test	Minn. R. 7017.2020, subp. 1 Minn. R. 7011.1270(A); Minn. R. 7000.7000; Minn. R. 7017.2030, subp. 1; Minn. R. 7007.0800, subp. 2
Permittee shall conduct performance tests as described below:  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.	Minn. R. 7017.2020, subp. 1 Minn. R. 7011.1270
Hg test frequency: If a test shows that an emission limit for mercury from EU002 is exceeded, the commissioner shall require testing every three months thereafter until compliance with the standard is demonstrated.	Minn. R. 7017.2020, subp. 1; Minn. R. 7011.1270; Minn. R. 7011.1265, subp.(A)(5)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

**Subject Item:** EU 015 Lime Storage Silo**Associated Items:** CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. (limit based on equipment capacity is approximately 3.9 lb/hr; PTE based on capacity is approximately 0.06 lb/hr)	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Perform Visible Emission Check and Complete Checklist as set forth in Appendix I of this permit.	Minn. R. 7007.0800. subp. 2

## TABLE B: SUBMITTALS

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

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**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Deviations Report	due 2 days after Discovery of Deviation . Submit a written description of any deviations endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Total Facility
Fugitive Control Plan	due 60 days after 04/29/2002 . The plan shall identify all fugitive emission sources, primary and contingent control measures, and recordkeeping. Permittee shall follow the actions and recordkeeping specified in the control plan.	Total Facility
Notification	due 30 days after Resuming Operation on distillate fuel oil by any emission unit in GP 003. The notification shall specify the date that distillate fuel oil combustion commenced.	GP003
Submittal	due 30 days after Initial Performance Test, the initial performance test data, performance evaluation of the CEMS using applicable performance specifications in Minn. R. 7017.1000, and the maximum demonstrated capacity and particulate matter control device temperature established during PCDD/PCDF testing.	GP001
Submittal	due 90 days after 04/29/2002 a plan for handling waste that has not been processed into refuse derived fuel (RDF).	Total Facility
Submittal	due 90 days after 04/29/2002 the plans required by Minn. R. 7011.1245 A to H as described in the Total Facility Section of Table A, identifying which required portions are not applicable. Keep the plans with the Operating Manual.	Total Facility
Submittal	due before 11/29/2002 , a fractional analysis of the waste stream from which the refuse derived fuel (RDF) is produced as described in Minn. R. 7007.0501, subp 2(A)(1) including a measurement of the noncombustible fraction of solid waste.	Total Facility
Submittal	due before 12/31/2003, a waste composition study (conducted on each waste stream from which the RDF is produced) every five years as described in Minn. R. 7007.0501, subp. 2A. The Waste Composition Study and Sample Analysis Report is due 45 days after the end of each five years starting from 12/1998.	Total Facility

**TABLE B: RECURRENT SUBMITTALS**

01/05/04

Facility Name: Xcel Energy - Key City/ Wilmarth

Permit Number: 01300015 - 004

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter starting 04/29/2002 (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 starting 04/29/2002 . The Report contents are listed in the Group 001 Section of Table A.	GP001
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 04/29/2002 . The first semiannual report submitted by 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. Use of the Quarterly EER is permitted for Deviations Report Form-1.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 04/29/2002 (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
Submittal	due 73 days after end of each calendar year starting 04/29/2002 an Ash Testing Report. Submit the 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. 10A - F.	Total Facility

## **APPENDIX I**

**Facility Name:** NSP - Key City/ Wilmarth

**Permit Number:** 01300015-004

### **Visible Emissions Checklist(s) Requirements**

#### Emission Units and Stack/Vents:

Lime storage silo (EU 015)

Visible Emissions Checklist(s): The Permittee shall check for visible emissions 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); and
- 9) Short description of emission unit.





## **APPENDIX II**

**Facility Name:** NSP - Key City/ Wilmarth

**Permit Number:** 01300015-004

### **RDF TRANSFER STATION AND UNLOADING AREA HOUSEKEEPING PLAN**

(Applies to insignificant activities, as identified in Appendix III)

#### **Introduction**

During the course of normal unloading activities, RDF can become airborne from the open side of the RDF transfer station (one side open for semi-trailers and the other open for access to the RDF unloading area). It is necessary to implement the following housekeeping procedures to minimize fugitive RDF or particulate emissions from open doors.

#### **Precautions**

Fugitive RDF should be collected and placed in the RDF storage area.

#### **Housekeeping**

To minimize the opportunity for RDF to become airborne, facility personnel shall conduct the following:

1. The Minnesota Waste Processing facility personnel shall keep the doors to the transfer barn closed at all times when not outloading RDF to the walking floor.
2. The contract 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. Xcel Energy personnel shall conduct a daily cleanup of the truck bay side of the transfer barn.
4. Annual clean-up of the property surrounding the transfer barn and truck bays shall be conducted jointly by Xcel Energy employees and Minnesota Waste Processing personnel.

#### **Traffic Control**

Any equipment utilized in the area shall be confined to the Processing Facility. If necessary to take unit from facility, all wheels shall be inspected for loose RDF prior to leaving.

#### **Inspections**

Visual inspections shall be conducted monthly to ensure that the area is clean and to minimize particulate emissions from open doors.



**APPENDIX III – Insignificant Activities****Facility Name:** NSP - Key City/ Wilmarth**Permit Number:** 01300015-004**Minn. R. 7007.1300 Insignificant Activities and Applicable Requirements**

<b>Minn. R. 7007.1300, subpart</b>	<b>Rule Description of the Activity</b>	<b>Applicable Requirement</b>
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane. <ul style="list-style-type: none"><li>• <b><i>space heaters are operated at the facility</i></b></li></ul>	Minn. R. 7011.0510/0515
3(G)	Emissions from a laboratory, as defined in the subpart. <ul style="list-style-type: none"><li>• <b><i>analysis laboratory</i></b></li></ul>	Minn. R. 7011.0510/0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
3(H)	Miscellaneous:	
	3. brazing, soldering or welding equipment; <ul style="list-style-type: none"><li>• <b><i>welding equipment</i></b></li></ul>	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:  1. 4,000 lbs/year of carbon monoxide; and  2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone. <ul style="list-style-type: none"><li>• <b><i>RDF Unloading</i></b></li></ul>	Minn. R. 7011.0715, subp. 1(A) & (B)
3(J)	Fugitive Emissions from roads and parking lots. <ul style="list-style-type: none"><li>• <b><i>Road and parking lot fugitive emissions</i></b></li></ul>	Minn. R. 7011.0150

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
4	<p>Emissions units with emissions less than all the following limits but not included in subpart 2:</p> <p>A. potential emissions of 5.7 pounds per hour or actual emissions of two tons per year of carbon monoxide;</p> <p>B. potential emissions of 2.28 pounds per hour or actual emissions of one ton per year for particulate matter, particulate matter less than ten microns, nitrogen oxide, sulfur dioxide, and VOCs; and</p> <p>C. for hazardous air pollutants, emissions units with: (1) potential emissions of 25 percent or less of the hazardous air pollutant thresholds listed in subpart 5; or (2) combined HAP actual emissions of one ton per year unless the emissions unit emits one or more of the following HAPs: carbon tetrachloride; ,2-dibromo-3-chloropropane; ethylene dibromide; hexachlorobenzene; polycyclic organic matter; antimony compounds; arsenic compounds, including inorganic arsine; cadmium compounds; chromium compounds; lead compounds; manganese compounds; mercury compounds; nickel compounds; selenium compounds; 2,3,7,8-tetrachlorodibenzo-p-dioxin; or dibenzofuran. If the emissions unit emits one or more of the HAPs listed in this subitem, the emissions unit is not an insignificant activity under this subitem.</p> <ul style="list-style-type: none"> <li>• <b><i>Stationary Internal Combustion Engines (2, emergency generators)</i></b></li> <li>• <b><i>RDF Conveyor</i></b></li> <li>• <b><i>Auxiliary Boiler (Boiler #3)</i></b></li> <li>• <b><i>RDF Transfer Station</i></b></li> <li>• <b><i>Fuel Oil Storage Tanks</i></b></li> </ul>	<p>Minn. R. 7011.2300, subp. 1 &amp; 2</p> <p>Minn. R. 7011.0715, subp. 1(A) &amp; (B); Appendix II</p> <p>Minn. R. 7011.0515, subp. 1 &amp; 2</p> <p>Minn. R. 7011.0715, subp. 1(A) &amp; (B); Appendix II</p> <p>Minn. R. 7011.1505</p>

### Minn. R. ch. 7008 Exempt Air Emissions

Cleanup solvent used by the facility is an exempt air emission under Minn. R. chapter 7008, provided the Permittee complies with the requirements of Minn. R. 7008.4100 (this activity was previously covered under Minn. R. 7007.1300, subp. 3(H)(1)).

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 01300015-004**

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

## **1. General Information**

### **1.1. Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: 4911)
Xcel Energy 414 Nicollet Mall Minneapolis, MN 55401	Northern States Power Company, d/b/a/ Excel Energy – Key City/Wilmarth 1040 Summit Avenue Mankato Blue Earth County
Contact: Alma Allen-Webb, (612) 330-5956	

### **1.2. Description of the Facility and Operations Allowed**

The facility covered by the permit is an electric power generation station located along the Minnesota River in Mankato, Minnesota. The Wilmarth plant is rated at 25 megawatts (MW) and has two boilers that primarily burn refuse derived fuel (RDF). The Key City plant is rated at 80 MW and has four turbine/generator sets that burn natural gas. The RDF burned at this facility is processed under contract with the Elk River Resource Recovery Facility in Elk River, Minnesota; Ramsey/Washington Resource Recovery Facility in Newport, Minnesota; the Prairieland Compost Facility in Truman, Minnesota; and Minnesota Waste Processing Company (MWPC) located on site.

Energy is produced through combustion of RDF in two traveling grate boilers. The units are identified in the permit as EU001 and EU002. The units are 180 million British thermal units per hour (MMBtu/hr) each, which equates to 16.4 tons of RDF per hour, at an assumed heat content of 5,500 Btu/lb. The combustors can also burn natural gas, distillate fuel oil, and wood. Natural gas is used at start-up and as necessary to maintain proper combustion conditions. The boilers were installed in 1947, and converted to burn RDF in 1985.

Each boiler exhausts through separate pollution control equipment (a scrubber for the control of acid gases and a baghouse for the control of particulate matter (PM)), and a 158 foot stack. Exhaust gases from each boiler are continuously monitored for carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), opacity, and oxygen (O<sub>2</sub>). A number of operating

parameters, including baghouse inlet temperature and steam flow rate, are also monitored continuously.

Hot water for internal use when EU001 and EU002 are down is provided by a natural gas fired boiler. A diesel fuel fired generator provides emergency electrical power.

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 Wilmarth RDF Ash Landfill. Other sources of PM emissions are the lime storage silo, RDF receiving building, and RDF transfer station.

Electrical energy is also produced at this facility by four 20 MW gas turbines (EU004, EU005, EU006, and EU007). These units were installed in 1971, and are intended to provide peaking capacity. The primary fuel burned is natural gas; distillate fuel oil is used as the backup fuel. The facility has two 1,000,000 gallon fuel oil tanks.

### **1.3 Description of the Changes Authorized by This Permit Action**

This permit action makes the following changes to the previous permit version:

1. Wood is listed as an allowed fuel. Wood was allowed by permits pre-dating the Title V permit, and emissions from wood combustion were included in the calculations for the Title V permit, but wood was not listed in the permit as an allowed fuel. Because the emission calculations included wood combustion, exclusion of wood from the list was a typographical error. Allowing wood to be burned does not result in any changes to the potential emissions listed in the technical support document or public notice for the original Title V permit. This change alone would qualify as insignificant.
2. Clarification was added as to when pollution control equipment is to be operated on Boilers 1 and 2. The current permit says that the PM control equipment must be operated at all times that RDF is being combusted, and that the only times the PM control equipment may be bypassed is when combusting only natural gas in startup mode. The draft permit changes this to state that the PM control must be operated at all times (does not specify "when RDF is being combusted"), and retains the exception that it may be bypassed when only natural gas is being combusted. Because the calculations (cited in 1. above) assumed that the waste combustor rules applied at all times, they also assumed that the required controls were being operated at all times. Therefore, it is reasonable to assume that the controls are being operated at all times (except when the requirement is waived when burning only natural gas in startup mode).
3. Clarification was added regarding when the waste combustor rules (Minn. R. 7011.1227, 7011.1228, and 7011.1240) apply, and when the standards of performance for indirect heating equipment (Minn. R. 7011.0510) apply. The standards of Minn. R. 7011.0510 were added to Table A. This change alone would qualify as insignificant.
4. The lime storage silo (EU015) was added back into the permit as an emission unit. It was erroneously listed as an insignificant activity in the original Title V permit. The applicable requirements do not change. This change in permit format alone would qualify as insignificant.

5. The requirement to test the opacity of fugitive emissions from the RDF transfer station, conveyor, and unloading operations on an annual basis was eliminated from the permit. These operations are, and were originally listed as, insignificant activities. Since the premise behind an activity being “insignificant” is that the emissions are not of significant concern, the underlying assumption must be that the emissions are less than those allowed by the applicable requirements. That is the case for these activities. Furthermore, the test method specified in the Title V permit (Method 22) is merely a test of whether or not there are fugitive emissions; it does not result in an opacity percentage to be compared to the limit in the applicable requirement. Visual observations of the areas and correction of problems are done by plant personnel on a monthly basis (much more frequently than the annual Method 22 test). Although the operations to which this change applies are insignificant activities, this change alone would require a major amendment, because requirements are being removed from the permit but the units and emissions to which they applied remain.
6. Replaced Appendix II (RDF Transfer Station and Unloading Area Housekeeping Plan) with Xcel Energy’s revised RDF Transfer Station and Unloading Area Housekeeping Plan. This change applies only to the RDF handling insignificant activities.

#### **1.4. Changes Made Since Beginning of Public Notice Period**

1. In response to questions from the Permittee, the language regarding monitoring of grate speed and distance traveled (EU001 and EU002) was enhanced to more clearly describe when monitoring must be done. The intent of the requirement has always been to monitor grate speed continuously and calculate distance traveled after RDF feed has stopped, to determine when a fuel switch from RDF to another fuel (natural gas) is complete. The language as placed on public notice stated that the grate speed must be continuously monitored after RDF feed has stopped, the distance traveled by the grate must be calculated once per minute, and that when the distance traveled is equal to the furnace depth multiplied by a safety factor of 1.1, the switch from RDF will be considered complete. However, as pointed out by the Permittee, while it was implicit that continuous monitoring of the grate speed and distance traveled was necessary during the fuel switch, it wasn’t explicit that the monitoring could cease when the fuel switch was complete. Therefore, language was added to explicitly state that the monitoring is to be done “until the fuel switch from RDF is complete.” This is a language clarification that could be made administratively under Minn. R. 7007.1400, subp. 1(G), therefore there is not a need to repeat the public notice.
2. Under GP002, the permit requires two separate performance tests. The first test was initially due 180 days after permit issuance, meaning issuance of the initial Title V permit, which was April 29, 2002. The permit placed on notice stated that the test was due 180 days after August 19, 2002, which was the date of administrative amendment 03100015-003. The date was changed back to accurately reflect the date of the initial Title V permit issuance.

#### **1.5. Facility Classification:**

<b>Classification</b>	<b>Major/Affected Source</b>	<b>Synthetic Minor</b>	<b>Minor</b>
PSD	All criteria pollutants	NA	NA
Part 70 Permit Program	All criteria pollutants, + HAPs	NA	NA

## **2. Regulatory and/or Statutory Basis**

### New Source Review

The facility is an existing major source under New Source Review regulations. No physical changes or changes in the method of operation are authorized by this permit. Wood was a fuel that the units were capable of burning and permitted to burn prior to January 6, 1975, and use of wood has never been prohibited in any permit for the facility.

### Part 70 Permit Program

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

### New Source Performance Standards (NSPS)

As described in the Technical Support Document of the original Title V permit (01300015-001), the facility is not subject to the requirements of NSPS Subparts Db, E, or Cb.

### National Emission Standards for Hazardous Air Pollutants (NESHAP)

The NESHAPs for Stationary Internal Combustion Engines, Combustion Turbines, and Institutional/Commercial Boilers are tentatively scheduled for promulgation in 2004. There are no promulgated NESHAPs that apply to the facility at this time.

### Federal Acid Rain Program

As described in the Technical Support Document of the original Title V permit (01300015-001), the facility is not subject to the requirements of the acid rain program.

### Minnesota State Rules

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

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0710/0715 Standards of Performance for Pre- and Post-1969 Industrial Process Equipment
- Minn. R. 7011.1225 Standards of Performance for Waste Combustors
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines



**Table 1. Regulatory Overview of Units Affected by the Permit Amendment**

EU, GP, or SV	Applicable Regulations	Comments:
EU015	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
EU001 EU002	Minn. R. 7011.1225	Standards of Performance for Waste Combustors apply at all times that the units are burning RDF. The times when the units are considered to be burning RDF are described in the permit.
EU001 EU002	Minn. R. 7011.0510	Standards of Performance for Existing Indirect Heating Equipment apply at time when the units are burning fuels other than RDF. The times when the units are considered to be burning RDF are described in the permit.

### **3. Technical Information**

#### **3.1 Calculations of Potential to Emit**

Attachment 1 to this TSD contains the Summary of the PTE as determined for the original Title V permit. The calculations for EU001 and EU002 show that wood was included in the original PTE calculations. No changes affecting PTE are authorized by this permit action.

#### **3.2 Compliance Assurance Monitoring (CAM)**

CAM applies to individual units at facilities that operate emission control devices subject to federally enforceable regulations promulgated prior to 1990. A CAM plan is required as part of an initial Part 70 application if the initial application is submitted after April 20, 1998. If the CAM plan is not submitted with the initial Part 70 application, then it must be submitted as part of an application for a major amendment to a Part 70 permit, with respect to those emissions units to which the major amendment applies. A CAM plan for all remaining sources/unit must be submitted as part of the application for reissuance of the Part 70 permit.

The Wilmarth/Key City plant submitted the Part 70 application prior to April 20, 1998, so a CAM plan was not included in that application. The first application for a major amendment to the Part 70 permit was received on May 15, 2003. A CAM plan was/is not required at this time because the only units to which the requirement for a major amendment applies are insignificant activities. Thus, the permitted potential emissions of those units are below the major source thresholds. The other units to which this permit action (EU001, EU002, and EU015) applies did not require the major amendment action.

#### **3.3 Periodic Monitoring**

No additional Periodic Monitoring is required. Although the limits imposed by Minn. R. 7011.0510 were added to the permit, they were always applicable when any fuel other than RDF was burned. EU001 and EU002 both have SO<sub>2</sub> monitors, which is considered sufficient monitoring for the SO<sub>2</sub> limits of Minn. R. 7011.0510. The PM limit of Minn. R. 7011.0510 is 10x the PM limit already imposed through the waste combustor rules. Since both EU001 and

EU002 have opacity monitors, it is assumed that if the opacity limits (and by association the PM limits) of the waste combustor rules are being met, then the less stringent Minn. R. 7011.0510 limits are also being met.

### 3.4 Insignificant Activities

The facility has several operations which are classified as insignificant activities. Appendix III, where the insignificant activities are listed, has been reformatted through this permit action. In addition, EU015, which was previously listed as an insignificant activity, has been moved to Table A, without changing the applicable requirements.

## 4. Conclusion

Based on the information provided by Xcel Energy, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 01300015-004 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

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Betsy Randt (enforcement)  
Mike Mondloch (peer reviewer)

Attachments:

1. PTE Summary
2. Facility Description and CD-01 Forms