

Attachment 3: Permit No. 10900020-003 Title I SIP Conditions only

AIR EMISSION PERMIT NO. 10900020- 003

IS ISSUED TO

ROCHESTER PUBLIC UTILITIES
1814 7th Street Northwest
Rochester, Olmsted County, MN 55906

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

Permit Type	Action No.	Application Date (s)	Issuance Date (s)
Total Facility Operating Permit	001	09/15/1995	01/10/1997
Major Amendment	002	05/30/2000	05/30/2001
Total Facility Operating Permit – Reissuance Minor Amendment	003	07/13/2001 09/22/2004	See Below

This permit supersedes Air Emission Permit Nos. 10900020-001 and 002, and 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, and any additions or changes to conditions incorporated into Minnesota’s State Implementation Plan (SIP) under 40 CFR § 52.1220, designated “Title I Conditions: State Implementation Plan (SIP) for SO₂” must go through the federal SIP approval process before becoming effective. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: Federal; Pt 70 Reissuance/Limits to Avoid NSR and NESHAPs, and Title I SIP Conditions (SO₂), Acid Rain.

Issue Date: February 7, 2008

Expiration: February 7, 2013

All Title I Conditions do not expire.

Each new or revised condition designated “Title I Condition: SIP for SO₂” is not effective or enforceable until approved by EPA as a SIP revision under Title I of the Clean Air Act.

Jeff J. Smith, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
Acting Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

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

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

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

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

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition.

Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

This permit is a Joint Title I/ Title V Operating Permit Reissuance, as it includes non-expiring Title I Conditions to implement the State Implementation Plan (SIP). Pursuant to 40 CFR § 50, 40 CFR § 51, 40 CFR § 52.1220, Minn. R. 7007.0100 subp. 25 B, Minn. R. 7007.0450 subp. 2 and 7007.1050 subp. 4.

Existing emission sources at the Cascade Creek plant are three combustion turbines and a starter engine. Permit No. 10900020-002, allowed for the installation of two additional turbines capable of burning distillate oil and natural gas. Permit No. 10900020-002 also authorized the modification of the existing turbine to allow for burning of natural gas and distillate fuel oil and established facility-wide federally enforceable emission limits that restrict potential emissions to less than major source levels under the federal Prevention of Significant Deterioration (PSD) and New Source Review (NSR) programs.

The facility is a major source for Nitrogen Oxides (NO_x) and Carbon Monoxide (CO) under 40 CFR Part 70, the Operating Permits Program. The facility is part of a State Implementation Plan (SIP) to reach attainment of Sulfur Dioxide (SO₂) ambient standards in the Rochester area. This permit contains SIP revisions which will be submitted to EPA for inclusion into the SIP.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

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

Subject Item: Total Facility

What to do	Why to do it
A. EMISSION LIMITS	hdr
B. OPERATION LIMITATIONS	hdr
C. MONITORING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Rochester Public Utilities Cascade Creek
 Permit Number: 10900020 - 003

F. STATE IMPLEMENTATION PLAN (SIP) REQUIREMENTS.	hdr
Sulfur Content of Fuel: less than or equal to 0.1 percent by weight . This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.	Title I Condition: State Implementation Plan (SIP) for SO2. Limits taken to maintain compliance with State and National Ambient Quality Standards for SO2. at Minn R. 7009.0080 and 40 CFR Section 50.4; 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.
Sulfur Content of Fuel: less than or equal to 0.42 percent by weight . This requirement will be terminated on the date EPA approves the revisions into the SIP at 40 CFR Section 52.1220.	Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.
THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THAT EPA APPROVES THIS REVISION INTO THE SIP AT 40 CFR PART 52.1220 Fuel Oil Sulfur Content: The Permittee shall analyze the content using either method 1 or 2: Method 1. The Permittee shall obtain and maintain a fuel supplier receipt from the fuel supplier for each shipment of distillate fuel oil delivered certifying that the shipment complies with the American Society of Testing and Materials (ASTM) specifications for distillate fuel oil and that the sulfur content is less than or equal to 0.42 percent by weight; OR (continued on next requirement)	Title I Condition: State Implementation Plan for SO2
Fuel Oil Sulfur Content (continued) Method 2. The Permittee may also analyze the distillate fuel oil in the following manner: a) The Permittee shall sample the fuel oil from the tank(s) after each delivery but not more than once each calendar week when multiple deliveries are made in a calendar week. Sampling shall be conducted within 48 hours after each delivery, or within 48 hours after the last of multiple deliveries in a calendar week. Samples shall be collected from the sample tap located on the main oil filter. Record the date and time of delivery, time of fuel sampling, initials of person recording the information, and the results of the fuel analysis. (continued on next requirement)	Title I Condition: State Implementation Plan for SO2
Fuel Oil Sulfur Content. (continued) b) The Permittee shall analyze the oil sample to determine the sulfur content of the fuel oil in percent by weight, in accordance with ASTM Method D-1552 or the current ASTM method; c) The Permittee shall analyze the oil sample to determine the heating value of the oil in Btu/gal, in accordance with ASTM Method D-240 or the current ASTM method.	Title I Condition: State Implementation Plan for SO2
THIS REQUIREMENT WILL BECOME EFFECTIVE ON THE DATE THAT EPA APPROVES THIS REVISION INTO THE SIP AT 40 CFR SECTION 52.1220. Monitoring for Sulfur Content in Fuel Oil: The Permittee shall comply with requirements under 40 CFR Part 75, Appendix D, Section 2.2 (Oil Sampling and Analysis). The Permittee presently follows the procedure in 40 CFR Part 75 Appendix D Section 2.2.4.3.	Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Rochester Public Utilities Cascade Creek
 Permit Number: 10900020 - 003

<p>State Implementation Plan Recordkeeping: Retain all records at the stationary source or at the RPU Service Facility at 4000 E. River Road for a period of five (5) years from the date of the required monitoring, sample, measurement, or report that corresponds with a "Title I Condition: State Implementation Plan (SIP) for SO2" requirement.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>
<p>Permanent Records for SIP: The Permittee shall permanently maintain the following information together with all amendments, revisions, and modifications to this information: 1. The Permittee shall maintain a file or files of information on the design, construction and operation of each emission facility, emission source, stack, structures pertinent to modeling for downwash, and any other information required to conduct SO2 ambient air quality modeling of emissions from the facility. 2. The Permittee shall maintain a file which includes all SO2 emission compliance demonstration plans which upon approval by the MPCA or EPA become integral and enforceable parts of the SIP. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Part 52.1220.</p>
<p>Deviations from requirements cited as "Title I Condition: State Implementation Plan (SIP) for SO2" shall be reported semiannually with the Semiannual Deviations Report required by this permit. Reporting for these conditions shall occur even if there were no deviations for the reporting period.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>
<p>Reporting: The Permittee may undertake certain changes to the facility without obtaining a modification to the SIP. However, if the Permittee does make a change, and if the change in any way affects SO2 emissions (changes the amount or the concentration, velocity, direction, or location of SO2 emissions in a manner that is not consistent with the scenarios modeled for the SIP analysis) the Permittee shall notify the Commissioner in writing at least 30 days prior to undertaking the change. The notification shall describe the change and why it does not require a modification of the SIP. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Part 52.1220.</p>
<p>CHANGES NOT REQUIRING A MODIFICATION TO THE SIP: The Permittee is authorized to make changes to the facility in compliance with Minnesota air permit rules and without obtaining a modification to the SIP as long as the change does not increase from any emission point, the SO2 emission rates (in lb/hr) allowed by this permit or overall SO2 emissions or adversely affect the conditions assumed in the air dispersion scenarios modeled for the SIP analysis. The dispersion modeling parameters for the worst-case scenario (100% rated capacity) are described in Appendix B, and forms the basis of the SO2 modeling. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>
<p>Remodeling for Attainment Demonstration; Before making any physical changes or changes to the method of operation which may adversely affect the conditions assumed in the air dispersion scenarios modeled for the SIP analysis (worst case scenario is listed in Appendix B), the Permittee shall demonstrate to the MPCA the SO2 plume dispersion characteristics following the physical change or change in the method of operation will be equivalent to or better than the dispersion characteristics modeled using the parameters in Appendix B. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates of SO2. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2; Minn. R. 7007.3000. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>
<p>Activities Requiring a Modification to the SIP. Activities requiring a modification of the SIP prior to the permittee commencing the activity include, but are not limited to for the following: 1. Any change to stack emissions exit velocity which may adversely affect the conditions assumed in the air dispersion scenarios modeled for the SIP analysis; 2. Any change to the exit point heat content of stack emissions which may adversely affect the conditions assumed in the air dispersion scenarios modeled for the SIP analysis; 3. Any reduction on stack height below that contained in Appendix B; 4. Any increase in stack exit diameter above that contained in Appendix B; and 5. Any construction or modification of structures that increase the effective structural dimensions. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2; Minn. R. 7007.3000. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Rochester Public Utilities Cascade Creek
 Permit Number: 10900020 - 003

<p>General Operation and Maintenance Requirements for the SIP. The Permittee shall operate and maintain the process equipment in a manner that does not adversely affect the dispersion scenarios and parameters modeled for the SIP analysis (worst case scenario is listed in Appendix B). Operation under conditions that do not adversely affect parameters used in the dispersion modeling performed to demonstrate that the Rochester SO2 maintenance area will be assumed to remain in compliance with SO2 National Ambient Air Quality Standards. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO2; Minn. R. 7007.3000. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>
<p>DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW</p>	<p>hdr</p>
<p>G. OTHER REQUIREMENTS</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-11

02/07/08

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

Subject Item: SV 001 Combustion Turbine**Associated Items:** EU 001 Combustion turbine #1

What to do	Why to do it
<p>Sulfur Dioxide: less than or equal to 46.07 lbs/hour Limit was derived from computer dispersion modeling based on a one-hour average. This limit is met by maintaining compliance with the allowable sulfur content in fuel oil.</p> <p>This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO₂. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220; Minn. R. 7009.0020.</p>
<p>Replacement of exhaust stack SV001 is pre-authorized, so long as the cross-sectional area at stack exit is not greater than that of the existing stack and that the stack exit height is greater than or equal to that of the existing stack. Further notification to the Commissioner is not required for this stack replacement project.</p> <p>This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO₂. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-12

02/07/08

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

Subject Item: SV 005 Combustion Turbine**Associated Items:** EU 003 Combustion turbine #2

What to do	Why to do it
<p>Sulfur Dioxide: less than or equal to 23.26 lbs/hour Limit was derived from computer dispersion modeling based on a one-hour average. This limit is met by maintaining compliance with the allowable sulfur content in fuel oil.</p> <p>This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.</p>	<p>Title I Condition: State Implementation Plan (SIP) for SO₂. 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220. Minn. R. 7009.0020.</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-13

02/07/08

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

Subject Item: SV 006 Combustion Turbine**Associated Items:** EU 004 Combustion turbine #3

What to do	Why to do it
Sulfur Dioxide: less than or equal to 23.26 lbs/hour Limit was derived from computer dispersion modeling based on a one-hour average. This limit is met by maintaining compliance with the allowable sulfur content in fuel oil. This requirement will be incorporated as a SIP Condition at 40 CFR Section 52.1220 on the date EPA approves the revisions into the SIP.	Title I Condition: State Implementation Plan (SIP) for SO ₂ . 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220. Minn. R. 7009.0020.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-16

02/07/08

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

Subject Item: EU 002 Starting engine**Associated Items:** SV 002 Starting Engine

SV 003 Starting Engine

What to do	Why to do it
A. EMISSION LIMITS	hdr
B. OPERATING CONDITIONS	hdr
Operate starting engine only during turbine start-up operation.	Title I Condition: State Implementation Plan (SIP) for SO ₂ . 40 CFR pt. 51; 40 CFR pt. 52, subp. Y; 40 CFR Section 52.1220.
MONITORING	hdr
C. RECORDKEEPING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

Subject Item: EU 003 Combustion turbine #2

Associated Items: CE 002 Steam or Water Injection

MR 001 NOx, EU003

MR 003 O2, EU003

MR 005 Gas fuel flow, EU003

MR 007 Mass of oil flow, EU003

SV 005 Combustion Turbine

What to do	Why to do it
A. EMISSION LIMITS	hdr
B. OPERATING CONDITIONS	hdr
C. MONITORING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Rochester Public Utilities Cascade Creek

Permit Number: 10900020 - 003

Subject Item: EU 004 Combustion turbine #3

Associated Items: CE 003 Steam or Water Injection

MR 002 NOx, EU004

MR 004 O2, EU004

MR 006 Gas fuel flow, EU004

MR 008 Mass of oil flow, EU004

SV 006 Combustion Turbine

What to do	Why to do it
A. EMISSION LIMITS	hdr
B. OPERATING CONDITIONS	hdr
C. MONITORING REQUIREMENTS	hdr

Appendix B: Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS

Facility Name: Rochester Public Utility - Cascade Creek
Permit Number: 10900020-003

Appendix B

Parameters Used in Modeling Compliance with Sulfur Dioxide National Ambient Air Quality Standards. Worst Conditions Represented by 100% Rated Capacity

Parameter	Emission Unit		
	EU001	EU003	EU004
X coordinate (UTM, m)	540,825.0	540,768.9	540,777.4
Y coordinate (UTM, m)	4,875,375.0	4,875,349.5	4,875,345.0
Stack base elevation, (m)	306.3	306.3	306.3
Stack height (m)	11.38	11.89	11.89
Stack equivalent diameter, (m)	4.86	3.52	3.52
Stack gas temperature (K)	780.4	641.3	641.3
Stack gas flow (m ³ /sec)	334.1	209.1	209.1
Stack exit velocity (m/s)	18.01	21.49	21.49
SO2 Emission Rate, lb/hr	46.07	23.26	23.26

Note: Stack gas velocities, flow rates and temperatures can be lower than the values listed above when the turbines are operated at rates lower than 100% capacity.