



AIR EMISSION PERMIT NO. 10900011-001

IS ISSUED TO

City of Rochester - Rochester Public Utilities

ROCHESTER PUBLIC UTILITIES - SILVER LAKE PLANT

425 West Silver Lake Drive Northeast

Rochester, Olmsted County, Minnesota 55906-3675

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

Permit Type	Application Date
Total Facility Operating Permit	09/15/95

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 and with all general conditions listed in Minn. R. 7007.0800, subp. 16, and all standard permit requirements listed in 40 CFR § 70.6(a), which are incorporated by reference. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

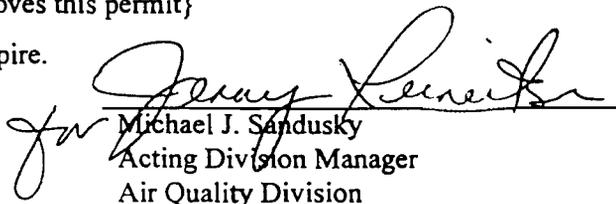
The Permittee is not required to comply with the terms of this permit until this permit and its conditions have been approved under the Title I State Implementation Plan (SIP) program by the U.S. Environmental Protection Agency (EPA). The Permittee shall continue to comply with the existing Air Emission Permit (No. 499A-85-OT-2), the 1980 Sulfur Dioxide (SO₂) SIP and the Second Amended Findings and Order for Particulate Matter less than 10 um in size (PM₁₀) and its subsequent amendments and any applicable requirements (such as those under the Title IV Acid Rain Program) until such time as this permit is approved by EPA under the Title I SIP program. This permit becomes effective on the day this permit is approved by EPA under the Title I SIP program. Any amendments shall be made to the existing permit prior to the effective date of this permit.

Permit Type: Federal ; Part 70

Issue Date: July 22, 1997

Effective Date: {Date Title I SIP program approves this permit}

Expiration: All Title I Conditions do not expire.


Michael J. Sandusky
Acting Division Manager
Air Quality Division

for Peder A. Larson
Commissioner
Minnesota Pollution Control Agency

MJF:lao

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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	(612)296-6300
Outside Metro Area	1-800-657-3864
TTY	(612)282-5332

The rule 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. 70007.1800, 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. Any requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to: Minn. R. ch. 7030 (Noise Pollution Control).

FACILITY DESCRIPTION:

The facility is an existing electric generating station having a total generating capacity of approximately 100 megawatts (MWe). The largest of the four boilers has a generating capacity of approximately 60 MWe.

The primary fuels fired in the facility's four boilers are bituminous coal and natural gas. All four boilers are pulverized coal-fired, dry-bottom boilers. Boiler Nos. 1 through 3 use multicyclones in series with electrostatic precipitators for particulate control. Boiler No. 4 uses only an electrostatic precipitator for control. Boiler Nos. 1, 2, 3, and 4 were constructed in 1949, 1952, 1962, and 1969, respectively. Other emission sources include a natural gas fired steam heating boiler, coal handling and storage facilities.

This is a reissuance of an existing permit, and the issuance of the air emissions operating permit required by Title V of the Clean Air Act Amendments of 1990, codified in 40 CFR pt. 70. Previously the facility operated under a state-only total facility air emission permit and an administrative order for PM₁₀ issued by the MPCA. The Title V permit includes the SIP conditions necessary to ensure compliance with PM₁₀ and SO₂ National Ambient Air Quality Standards. The last total facility permit was issued on September 11, 1985. That permit expired in 1990, and since the expiration, Rochester Public Utilities - Silver Lake, has operated the plant under the conditions of the expired permit as is required by Minn. R. 7001.0160, Continuation of Expired Permit and under the conditions of the Administrative Order as amended.

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

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

Subject Item: Total Facility

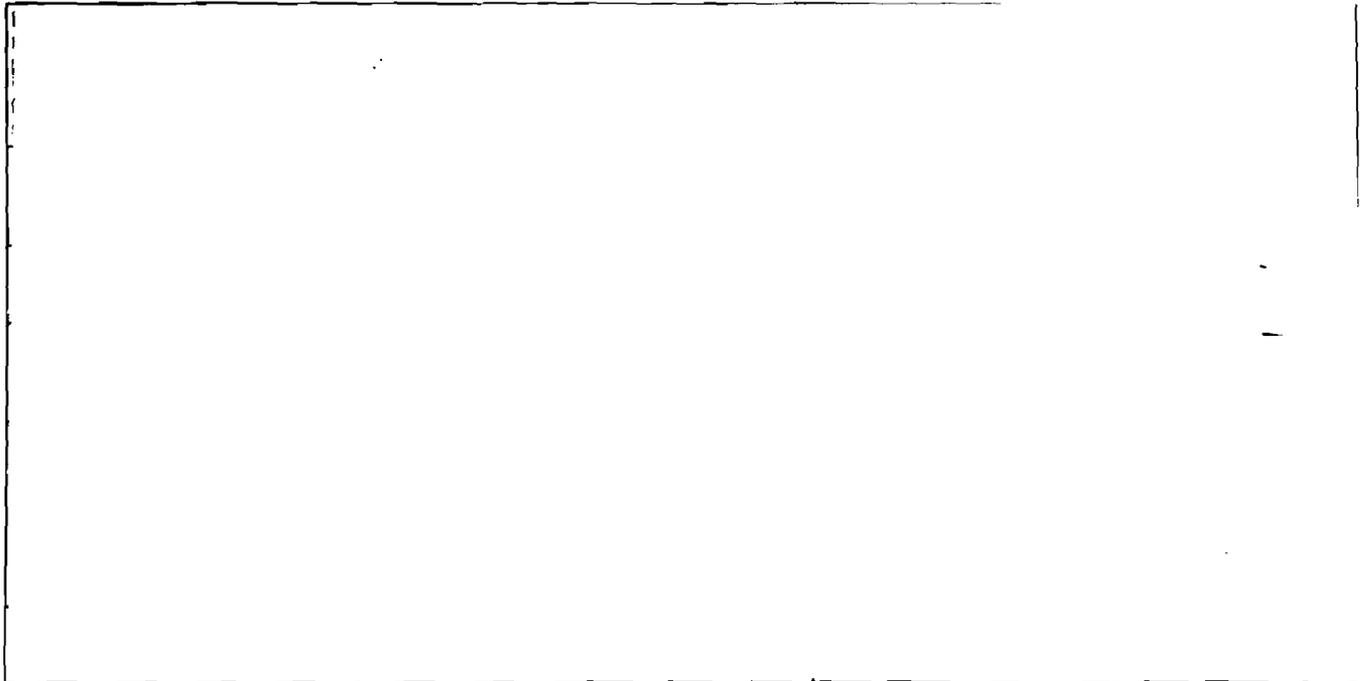
What to do	Why to do it
<p>State Implementation Plan Recordkeeping: Retain all records at the stationary source or at the RPU-Service Center Facility (4000 E. River Road NE) for a period of five (5) years from the date of the required monitoring, sample, measurement, or report that corresponds with a "Title I condition: State Implementation Plan for SO2" requirement.</p>	<p>Title I Condition: State Implementation Plan for SO2</p>
<p>Deviations from requirements cited as "Title I Condition: State Implementation Plan 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 for SO2</p>
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TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001



For each boiler the Permittee operates at a heat input rate greater than the rate used in SO2 emissions modeling, the Permittee shall comply with a revised SO2 emission limit. The revised limit shall be determined by multiplying the one-hour and 24-hour TACWEF limits and the 1-hour, 3-hour, and 24-hour SO2 limits in this permit, by an adjustment factor calculated as shown below. If more than one boiler is operated at a heat input rate greater than the rate used during SO2 emissions modeling, the lowest of the calculated adjustment factors shall be used to modify the TACWEF limits and the 1-hour, 3-hour, and 24-hour limits.

Adjustment Factor = heat input rate during modeling/
actual heat input rate

The factor is a dimensionless number, and heat inputs are expressed in MMBtu/hr.

Modeling heat input rates are as follows:

- Boiler 1 - 115.5 MMBtu/hr
- Boiler 2 - 152.7 MMBtu/hr
- Boiler 3 - 284.5 MMBtu/hr
- Boiler 4 - 614.5 MMBtu/hr

Title I Condition: State Implementation Plan for SO2 for 3-hr and 24-hour limits, and 24-hr TACWEF; Minn. R. 7007.0800, subp. 2 for 1-hr TACWEF and 1-hour limit

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: GP 001 Boilers 1,2,3 and 4

- Associated Items: EU 001 Boiler, Unit # 1
 EU 002 Boiler, Unit #2
 EU 003 Boiler, Unit #3
 EU 004 Boiler, Unit #4

What to do	Why to do it
<p>Total Ambient Culpability Weighted Emission Factors (TACWEF): Using SO2 CEM data, SO2 emissions from GP001 must simultaneously comply with the following equations, on a 24-hour average basis (calendar day): (1) $0.132 \cdot F1 + 0.167 \cdot F2 + 0.281 \cdot F3 + 0.420 \cdot F4 < 2.2752$ lb/mmBtu (2) $0.235 \cdot F1 + 0.260 \cdot F2 + 0.417 \cdot F3 + 0.088 \cdot F4 < 2.4164$ lb/mmBtu (3) $0.121 \cdot F1 + 0.160 \cdot F2 + 0.288 \cdot F3 + 0.430 \cdot F4 < 2.3292$ lb/mmBtu where: F1, F2, F3 and F4 represent the monitored SO2 emission level of EU001, EU002, EU003 and EU004, respectively (in units of lb SO2/mmBtu) for a given monitoring cycle and the coefficients are dimensionless numbers determined from previous dispersion modeling submittals already approved by the MPCA. Note: SO2 emissions from EU001 and EU002 are measured collectively in SV001.</p>	<p>Title I Condition: State Implementation Plan for SO2</p>
<p>The Permittee shall install, maintain, calibrate and operate SO2 Continuous Emission Monitoring Systems, in accordance with 40 CFR pt. 60 Appendix B and Minn. R. 7017.1000 (Performance Specification 2), located as follows: 1) Common outlet breeching or stack for EU001 and EU002; 2) Stack or outlet breeching for EU003; and, 3) Stack or outlet breeching for EU004. The permittee's calculations shall be used to determine compliance with the 1-hour, and 24-hour TACWEF equations.</p>	<p>Title I Condition: State Implementation Plan for SO2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: SV 001

Associated Items: EU 001 Boiler, Unit # 1

EU 002 Boiler, Unit #2

MR 001

MR 002

MR 003

What to do	Why to do it
Sulfur Dioxide: less than or equal to 3.2 lbs/million BTU heat input using 3 Hour Average and 24-hour average basis (calendar day). The permittee shall calculate and record each 3 hours and each 24 hours (calendar day basis), the 3-hour and 24-hour SO2 emission values, respectively, during operation.	Title I Condition: State Implementation Plan for SO2
The Permittee shall use the SO2 CEM on SV001 to measure SO2 emissions to determine compliance with the SIP SO2 emission limit.	Title I Condition: State Implementation Plan for SO2
CEMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all CEMS shall be in continuous operation when combusting solid and/or liquid fuels.	Title I Condition: State Implementation Plan for SO2
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 as amended except as allowed elsewhere in this permit.	Title I Condition: State Implementation Plan for SO2

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: EU 001 Boller, Unit # 1

Associated Items: CE 001 Centrifugal Collector - High Efficiency

CE 002 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 1,2,3 and 4

SV 001

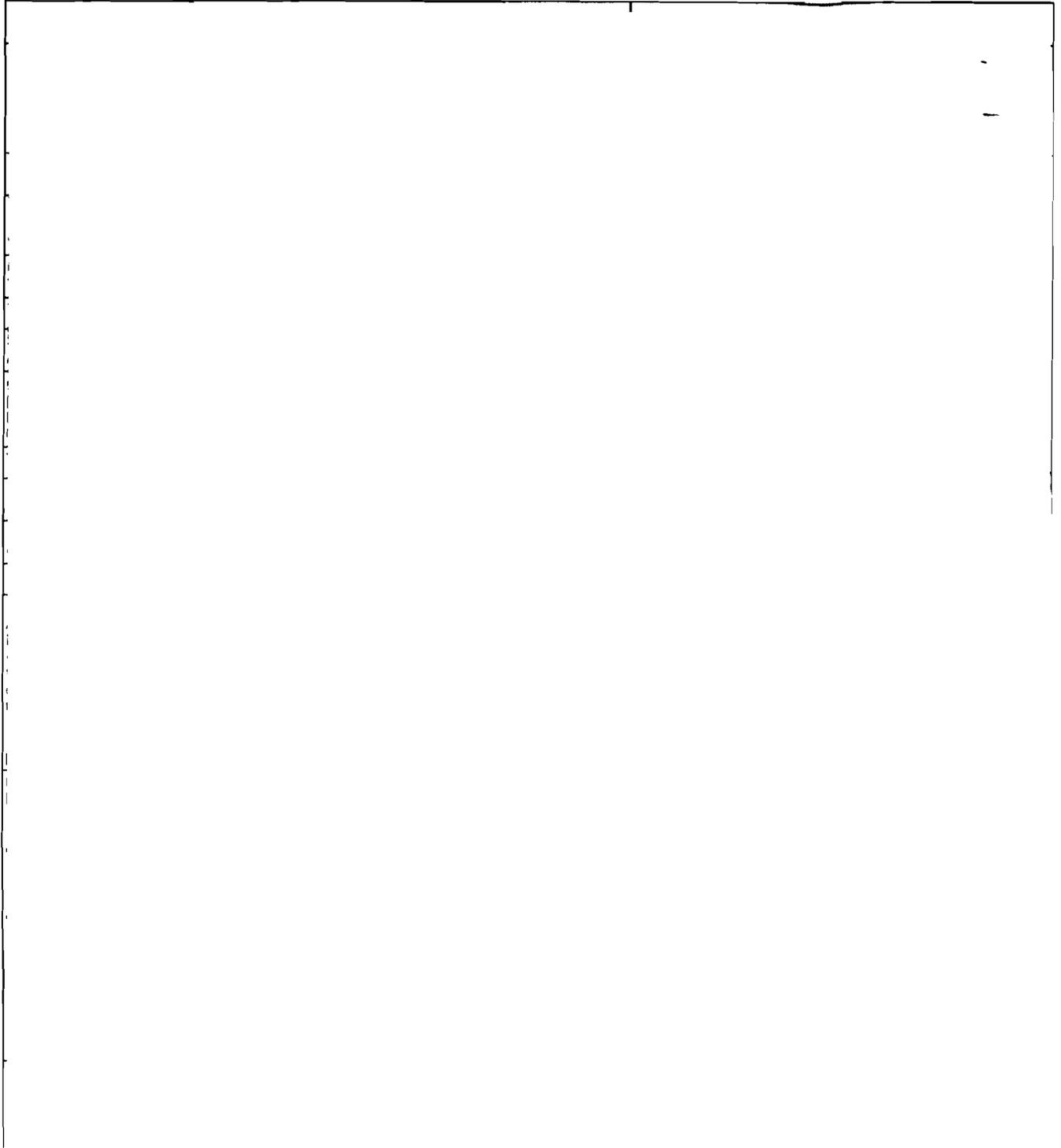


TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: EU 002 Boiler, Unit #2

Associated Items: CE 003 Centrifugal Collector - High Efficiency
CE 004 Electrostatic Precipitator - High Efficiency
GP 001 Boilers 1,2,3 and 4
SV 001

What to do	Why to do it

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

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TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: EU 003 Boiler, Unit #3

Associated Items: CE 005 Centrifugal Collector - High Efficiency

CE 006 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 1,2,3 and 4

MR 004

MR 005

MR 006

SV 002

What to do	Why to do it
Sulfur Dioxide: less than or equal to 3.2 lbs/million BTU heat input using 3 Hour Average and 24-Hour Average basis (calendar day). The permittee shall calculate and record each 3 hours and each 24 hours, the 3-hour and 24-hour SO2 emission values, respectively during operation.	Title I Condition: State Implementation Plan for SO2; ensures compliance with Minn. R. 7011.0510, subp. 1
The Permittee shall use the SO2 CEM on SV002 to measure SO2 emissions to determine compliance with the SIP SO2 emission limit.	Title I Condition: State Implementation Plan for SO2
CEMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all CEMS shall be in continuous operation when combusting solid and/or liquid fuels.	Title I Condition: State Implementation Plan for SO2
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 as amended except as allowed elsewhere in this permit.	Title I Condition: State Implementation Plan for SO2
Initial Performance Test: due 180 days after Effective Date of Permit to determine compliance with the modeled PM10 Title I condition emission limit.	Title I Condition: State Implementation Plan for SO2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

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CEMS Re-installation: Re-install CEMS when and if necessary, according to the procedures in Minn. Rules and procedures approved by this agency.	Title 1 Condition: State Implementation Plan for SO ₂ ; Minn. R. 7007.0800, subp. 2
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TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: EU 004 Boiler, Unit #4

Associated Items: CE 007 Electrostatic Precipitator - High Efficiency

GP 001 Boilers 1,2,3 and 4

MR 007

MR 008

MR 009

MR 010

MR 011

MR 012

MR 013

SV 003

What to do	Why to do it
Sulfur Dioxide: less than or equal to 3.2 lbs/million BTU heat input using 3 Hour Average and 24-Hour Average basis (calendar day). The permittee shall calculate and record each 3 hours and each 24 hours (calendar day basis), the 3-hour and 24-hour SO2 emission values, respectively during operation.	Title I Condition: State Implementation Plan for SO2; ensures compliance with Minn. R. 7011.0510, subp. 1
The Permittee shall use the SO2 CEM (on SV003) required by 40 CFR part 75, to measure SO2 emissions. The Permittee shall use this SO2 CEM emissions data to determine compliance with the SIP SO2 emission limit. However, the Permittee may use SO2 emissions data from the non-part 75 SO2 CEM for determining compliance with the SIP SO2 emission limit, instead of data from the part 75 CEM, provided the Permittee complies with the requirements for the non-part 75 SO2 CEM as specified in this permit.	Title I Condition: State Implementation Plan for SO2
CEMS QA/QC: The owner or operator of an affected facility shall operate, calibrate, and maintain each CEMS according to the QA/QC procedured in 40 CFR pt. 75, Appendix B as amended, except as allowed elsewhere in this permit.	Title I Condition: State Implementation Plan for SO2; Minn. R. 7007.0800, subp. 2; 40 CFR Section 75.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

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TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

CEMS Re-installation: Re-install non-part 75 CEMS when and if necessary, according to the procedures in Minn. Rules and procedures approved by this agency.	Title 1 Condition: State Implementation Plan for SO2; Minn. R. 7007.0800, subp. 2
Non Part 75 CEMS Continuous Operation: When determining compliance with SO2 SIP limits, all CEMS shall be in continuous operation while combusting solid and/or liquid fuels, except during system breakdowns, repairs, calibration checks, and zero and span adjustments.	Title 1 Condition: State Implementation Plan for SO2; Minn. R. 7007.0800, subp. 2
Non Part 75 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 as amended except as allowed elsewhere in this permit.	Title 1 Condition: State Implementation Plan for SO2; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: EU 005 Steam Heating Boiler

Associated Items: SV 004

What to do	Why to do it
Fuel Burned: natural gas only.	Title I Condition: limit to avoid classification as a significant net emissions increase as defined by 40 CFR pt. 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

Subject Item: FS 001 Coal unloading, handling and storage

What to do	Why to do it

TABLE B: SUBMITTALS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

What to send	When to send	Portion of Facility Affected

TABLE B: RECURRENT SUBMITTALS

08/22/97

Facility Name: Rochester Public Utilities - Silver Lake Plant

Permit Number: 10900011 - 001

What to send	When to send	Portion of Facility Affected