

AIR EMISSION PERMIT NO. 10900006- 005

IS ISSUED TO

International Business Machine Corporation

IBM - Rochester

3605 Highway 52 N

Rochester, Olmsted County, MN 55901-7829

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	June 15, 1995
Moderate Amendment	1998
Major Amendment	November 1998
Moderate Amendment	December 23, 1999
Major Amendment	November 9, 2000
Minor Amendment	February 12, 2001
Administrative Amendment	March 22, 2001

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

Permit Type: State; Synthetic Minor Part 70

Issue Date: June 21, 2001

Expiration: Permit does not expire
All Title I Conditions do not expire.

Ann M. Foss
Manager
North/South Major Facilities

For Karen A. Studders
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 allows for the operation of up to 14 alcohol baths and 14 spin dryers at the facility. To avoid classification as a major source under 40 CFR 52.21, the permit requires that VOC emissions from all of the baths and seven of the spin dryers be controlled by scrubbers.

As part of this permit action, two pieces of equipment are also being replaced. A 25 KW Ford natural gas-fired engine/generator (EU 015) will be removed and replaced with a 163 KW Caterpillar diesel engine/generator (EU 059) and a 190 HP Cummins diesel engine (EU 037) will be removed and replaced with a 266 HP Caterpillar diesel engine (EU 058).

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

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

Subject Item:**Total Facility**

What to do	Why to do it
A. OPERATING REQUIREMENTS	hdr
Inapplicable Requirement: The operation of this facility does not result in a major source as defined in Minn. R. 7007.0200, subp. 2(A)(1), providing the permittee meets the requirements of this permit. The permit shield applies to this determination under Minn. R. 7007.1800, subp. A(2).	Minn. R. 7007.0200, subp. 2(A)(1); Minn. R. 7007.1800, subp. (A)(2)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.	Minn. R. 7007.0800, subp. 14 and 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
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Air Pollution Control Equipment: Operate all pollution control equipment identified in this permit 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)
C. MONITORING REQUIREMENTS	hdr
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
D. RECORD KEEPING REQUIREMENTS	hdr
State Implementation Plan Recordkeeping: Retain all records at the stationary source 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 SO ₂ " requirement.	Title I Condition: State Implementation Plan for SO ₂
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
E. REPORTING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

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Facility Name: IBM - Rochester

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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. If deviations from any requirement cited as "Title I Condition: State Implementation Plan for SO2" did not occur during the reporting period, the permittee shall indicate such in the Semiannual Deviation Report.	Title I Condition: State Implementation Plan for SO2
Amendments to Title I Conditions: If any permit requirement cited as "Title I Condition: State Implementation Plan for SO2" is amended, the amendment must first comply with procedures of parts 7007.0850 (Permit Application Notice and Comment) and 7007.0950 (EPA Review and Objection) applicable to major amendments to Part 70 permits.	Title I Condition: State Implementation Plan for SO2
<p>Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advanced knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp. 3
<p>Breakdowns: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner again when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emissions Inventory Report: due 91 days after 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
F. PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch 7017
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: GP 001 Boilers, Generators, and Fire Pumps

Associated Items:

- EU 001 Boiler 1
- EU 002 Boiler 2
- EU 003 Boiler 3
- EU 004 Emergency Electric Generator
- EU 005 Emergency Electric Generator
- EU 006 Emergency Electric Generator
- EU 007 Emergency Electric Generator
- EU 008 Emergency Electric Generator
- EU 009 Emergency Electric Generator
- EU 010 Emergency Electric Generator
- EU 011 Emergency Electric Generator
- EU 012 Emergency Electric Generator
- EU 013 Emergency Electric Generator
- EU 014 Emergency Electric Generator
- EU 016 Emergency Electric Generator
- EU 017 Emergency Electric Generator
- EU 018 Emergency Electric Generator
- EU 019 Emergency Electric Generator
- EU 020 Emergency Electric Generator
- EU 021 Emergency Electric Generator
- EU 022 Emergency Electric Generator
- EU 023 Emergency Electric Generator
- EU 024 Emergency Electric Generator
- EU 025 Emergency Electric Generator
- EU 027 Emergency Electric Generator
- EU 028 Emergency Electric Generator
- EU 029 Emergency Electric Generator
- EU 030 Auxiliary Emergency Electric Generator 1
- EU 031 Auxiliary Emergency Electric Generator 2
- EU 032 Auxiliary Emergency Electric Generator 3
- EU 033 Auxiliary Emergency Electric Generator 4
- EU 034 Auxiliary Emergency Electric Generator 5
- EU 035 Fire Pump 1
- EU 049 Boiler 4
- EU 050 Boiler 5
- EU 051 Emergency Electric Generator
- EU 052 Emergency Electric Generator
- EU 058 East Diesel Fire Pump
- EU 059 Bldg 104 Diesel Generator
- SV 001
- SV 002
- SV 003
- SV 004
- SV 005
- SV 006

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Associated Items: SV 007
SV 008
SV 009
SV 010
SV 011
SV 012
SV 013
SV 014
SV 015
SV 016
SV 017
SV 018
SV 019
SV 020
SV 021
SV 022
SV 023
SV 024
SV 025
SV 027
SV 028
SV 029
SV 030
SV 031
SV 032
SV 033
SV 034
SV 035
SV 037
SV 049
SV 050
SV 051
SV 052
SV 058
SV 059

What to do	Why to do it
A. EMISSION LIMITS	hdr
Nitrogen Oxides: less than or equal to 99 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid major source classification under 40 CFR 52.21; limit to avoid major source classification under 40 CFR pt. 70.
Sulfur Dioxide: less than or equal to 99 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid major source classification under 40 CFR 52.21; limit to avoid major source classification under 40 CFR pt. 70.
B. RECORD KEEPING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

<p>Record keeping: by the 15th day of each calendar month, calculate and record nitrogen oxide emissions for the previous month and previous 12-month period. Monthly nitrogen oxide emissions shall be calculated according to the following equation:</p> $\text{NOx} = [(Q_{\text{ngb}} * 0.0001 \text{ lb NOx/cf}) + (Q_{\text{ngbl}} * \text{NGBLFAC in lb NOx/cf}) + (Q_{\text{r}} * 0.055 \text{ lb NOx/gal}) + (Q_{\text{lp}} * 0.019 \text{ lb NOx/gal}) + (Q_{\text{d}} * 0.020 \text{ lb NOx/gal}) + (H_{\text{ng}} * 0.0033 \text{ lb NOx/cf} * 424 \text{ cf/hr}) + (H_{\text{df}} * 0.61 \text{ lb NOx/gal} * 295.4 \text{ gal/hr}) + (Q_{\text{df}} * 0.61 \text{ lb NOx/gal})]$ <p>where NGBLFAC = 0.00005 lb NOx/cf or the most recent MPCA approved NOx test data</p>	<p>Title I Condition: Recordkeeping to avoid major source classification under 40 CFR 52.21; recordkeeping to avoid major source classification under 40 CFR pt. 70; Minn. R. 7007.0800, subp. 5</p>
<p>(continued from previous requirement) Where: Q_{ngb} = cubic feet (cf) of natural gas combusted in boilers 1, 2, & 3 Q_{ngbl} = cubic feet (cf) of natural gas combusted in boilers 4, & 5 Q_r = gallons (gal) of residual oil combusted in boilers Q_{lp} = gallons of LP gas combusted in boilers Q_d = gallons of distillate oil combusted in boilers H_{ng} = hours of operation with natural gas combusted in generators and fire pumps H_{df} = hours of operation with diesel fuel combusted in generators and fire pumps Q_{df} = gallons of diesel fuel combusted in auxiliary generators</p> <p>Fuel usages (Q) are volumes per month for the previous month. Hours of operation (H) are hours per month for the previous month.</p> <p>Calculations of emissions for the first eleven months after permit issuance shall be based on actual operating history.</p>	<p>Title I Condition: Recordkeeping to avoid major source classification under 40 CFR 52.21; recordkeeping to avoid major source classification under 40 CFR pt. 70; Minn. R. 7007.0800, subp. 5 (continued from previous requirement)</p>
<p>Record keeping: by the 15th day of each calendar month, calculate and record sulfur dioxide emissions for the previous month and previous 12-month period. Monthly sulfur dioxide emissions shall be calculated according to the following equation:</p> $\text{SO}_2 = [(Q_{\text{ngb}} * 0.0000006 \text{ lb SO}_2/\text{cf}) + (Q_{\text{r}} * 0.159 \text{ lb SO}_2/\text{gal} * \text{Sr}) + (Q_{\text{lp}} * 0.00010 \text{ lb SO}_2/\text{gal} * \text{Slp}) + (Q_{\text{d}} * 0.144 \text{ lb SO}_2/\text{gal} * \text{Sd}) + (H_{\text{ng}} * 0.0000006 \text{ lb SO}_2/\text{cf} * 424 \text{ cf/hr}) + (H_{\text{df}} * 0.008 \text{ lb SO}_2/\text{gal} * 295.4 \text{ gal/hr}) + (Q_{\text{df}} * 0.008 \text{ lb SO}_2/\text{gal})]$ <p>Where: Q_{ngb} = cubic feet (cf) of natural gas combusted in boilers Q_r = gallons (gal) of residual oil combusted in boilers Q_{lp} = gallons of LP gas combusted in boilers Q_d = gallons of distillate oil combusted in boilers</p> <p>(continued on next requirement)</p>	<p>Title I Condition: Recordkeeping to avoid major source classification under 40 CFR 52.21; recordkeeping to avoid major source classification under 40 CFR pt. 70; Minn. R. 7007.0800, subp. 5.</p>
<p>(continued from previous requirement)</p> <p>H_{ng} = hours of operation with natural gas combusted in generators and fire pumps H_{df} = hours of operation with diesel fuel combusted in generators and fire pumps Sr = Sulfur content in residual oil in percent sulfur by weight, determined according to requirement in GP 001 Sd = Sulfur content in distillate oil in percent sulfur by weight, determined according to requirement in GP 001 Slp = Sulfur content expressed in gr/100 cubic feet gas vapor. Q_{df} = gallons of diesel fuel combusted in auxiliary generators</p> <p>Fuel usages (Q) are volumes per month for the previous month. Hours of operation (H) are hours per month for the previous month.</p> <p>Calculations of emissions for the first eleven months after permit issuance shall be based on actual operating history.</p>	<p>Title I Condition: Recordkeeping to avoid major source classification under 40 CFR 52.21; recordkeeping to avoid major source classification under 40 CFR pt. 70; Minn. R. 7007.0800, subp. 5 (continued from previous requirement)</p>
<p>Fuel Usage Recordkeeping: by the 15th day of the month for GP 002 and the five auxiliary emergency electric generators in GP003:</p> <p>1) record the type of fuel combusted during the previous month; 2) record the total fuel usage for each fuel type during the previous month and the previous 12-month period.</p>	<p>Title I Condition: recordkeeping to avoid major source classification under 40 CFR 52.21; recordkeeping to avoid major source classification under 40 CFR pt. 70; Minn. R. 7007.0800, subp. 5; meets requirements of 40 CFR Section 60.48c(g)</p>
<p>Hours of Operation Recordkeeping: by the 15th day of the month for GP 003, excluding the five auxiliary emergency generators:</p> <p>1) record the type of fuel combusted during the previous month; 2) record the total hours of operation for each fuel type during the previous month and the previous 12-month period.</p>	<p>Title I Condition: Limit to avoid major source classification under 40 CFR 52.21; recordkeeping to avoid major source classification under 40 CFR pt. 70; Minn. R. 7007.0800, subp. 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

<p>The permittee shall either: 1) obtain and maintain a fuel supplier receipt from the fuel supplier for each shipment of residual oil, distillate oil and diesel fuel certifying that the shipment complies with the American Society of Testing and Materials (ASTM) specifications for residual oil, distillate oil and diesel fuel and that the sulfur content is less than or equal to 1.50 percent by weight for residual oil, 0.50 percent by weight for distillate oil, and 0.05 percent by weight for diesel fuel; OR (continued on next requirement)</p>	Title I Condition: State Implementation Plan for SO2
<p>(continued from previous requirement)</p> <p>2) sample the fuel oil from the tank(s) after each delivery. Sampling shall be conducted within 48 hours after each delivery, or within 48 hours after the last of multiple deliveries in a calendar week if oil is combusted at the time of delivery. If oil is not combusted at the time of delivery, sampling shall be conducted within 30 days after each delivery or within 30 days after the last of multiple deliveries in a calendar week but prior to combustion of any oil. Samples shall be collected from a location representative of the contents of the tank. Record the date and the time of delivery, time of fuel sampling, initials of person recording the information, and the results of the fuel analysis. The fuel samples shall be analyzed to determine the sulfur content of the fuel in percent by weight, in accordance with the current ASTM Method for that fuel.</p>	Title I Condition: State Implementation Plan for SO2 (continued from previous requirement)

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: GP 002 Boilers 1, 2, 3, 4, and 5

Associated Items: EU 001 Boiler 1

EU 002 Boiler 2

EU 003 Boiler 3

EU 049 Boiler 4

EU 050 Boiler 5

What to do	Why to do it
A. EMISSION LIMITS	hdr
Sulfur Dioxide: less than or equal to 143.8 lbs/hour using 24-hour Block Average (midnight to midnight) for any calendar day when residual oil is burned, and two or more boilers burn oil.	Title I condition: State implementation Plan for SO2
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input (applies individually and only to EU 001, EU 002, and EU 003 in GP 002).	Minn. R. 7011.0510, subp. 1
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 individually and only to EU 001, EU 002, and EU 003 in GP 002).	Minn. R. 7011.0510, subp. 2
B. OPERATING REQUIREMENTS	hdr
Fuel usage: Boiler #1 is limited to natural gas, LP gas, and distillate oil; Boilers #2 & #3 are limited to natural gas, residual oil, LP gas, and distillate oil; and, Boilers #4 & #5 are limited to natural gas and distillate oil.	Title I Condition: State Implementation Plan for SO2
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for distillate oil.	Title I Condition: State Implementation Plan for SO2
Sulfur Content of Fuel: less than or equal to 1.5 percent by weight for residual oil.	Title I Condition: State Implementation Plan for SO2
Install and operate a NOx burner, in each of Boilers #4 & #5, that will not emit more than 0.000100 lb NOx/cubic feet of natural gas.	Title I Condition: Limit to avoid major source classification under 40 CFR 52.21
No more than 4 boilers may be in operation at the same time.	Title I Condition: State Implementation Plan for SO2
C. RECORD KEEPING REQUIREMENTS	hdr
SO2 Emission Limit Recordkeeping: once each day, record the calculated 24-hr Block Average (midnight to midnight) SO2 emission limit for the previous calendar day if residual oil was burned in two boilers during the previous day.	Title I condition: State Implementation Plan for SO2
SO2 Emission Calculations and Recordkeeping: once each day, calculate and record the 24-hour block average SO2 emission rate for the previous calendar day, using the following formula: Emission Rate (lb SO2/hr) = [(Ar * 0.159 * Sr) + (Ad * 0.144 * Sd) + (Alp * 0.0001 * SIp)] Ar = 24-hr block average residual oil usage (gal/hr) Ad = 24-hr block average distillate oil usage (gal/hr) Alp = 24-hr block average LP gas usage (gal/hr) Sr = the weight percent sulfur (determined according to the requirements in GP 001) Sd = the weight percent sulfur (determined according to the requirements in GP 001) SIp = the sulfur content expressed in gr/100 cf of gas vapor.	Title I Condition: State Implementation Plan for SO2
Recordkeeping: for each calendar day (midnight to midnight) when residual oil is used in two boilers, calculate and record the individual 24-hour block average usages for residual oil, distillate oil, and LP gas (in gallons per hour) by the end of the following calendar day. The 24-hour block average usage is determined by dividing the usage rate for the calendar day (in gallons per day) by 24 hours/day.	Title I Condition: State Implementation Plan for SO2
Recordkeeping: record the type of fuel combusted in each boiler, for each hour of boiler operation.	Title I Condition: State Implementation Plan for SO2
Recordkeeping: record number of boilers in operation, at any time.	Title I Condition: State Implementation Plan for SO2
ADDITIONAL REQUIREMENTS	hdr
Equipment Removal and/or Dismantlement: due 30 days after Startup of Boiler # 5. Within 30 days after startup of Boiler #5, Boiler #1 shall be removed.	Title I Condition: State Implementation Plan for SO2; Minn. R. 7007.0800, subp. 6

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: GP 003 Generators and Fire Pumps

Associated Items:

- EU 004 Emergency Electric Generator
- EU 005 Emergency Electric Generator
- EU 006 Emergency Electric Generator
- EU 007 Emergency Electric Generator
- EU 008 Emergency Electric Generator
- EU 009 Emergency Electric Generator
- EU 010 Emergency Electric Generator
- EU 011 Emergency Electric Generator
- EU 012 Emergency Electric Generator
- EU 013 Emergency Electric Generator
- EU 014 Emergency Electric Generator
- EU 016 Emergency Electric Generator
- EU 017 Emergency Electric Generator
- EU 018 Emergency Electric Generator
- EU 019 Emergency Electric Generator
- EU 020 Emergency Electric Generator
- EU 021 Emergency Electric Generator
- EU 022 Emergency Electric Generator
- EU 023 Emergency Electric Generator
- EU 024 Emergency Electric Generator
- EU 025 Emergency Electric Generator
- EU 027 Emergency Electric Generator
- EU 028 Emergency Electric Generator
- EU 029 Emergency Electric Generator
- EU 030 Auxiliary Emergency Electric Generator 1
- EU 031 Auxiliary Emergency Electric Generator 2
- EU 032 Auxiliary Emergency Electric Generator 3
- EU 033 Auxiliary Emergency Electric Generator 4
- EU 034 Auxiliary Emergency Electric Generator 5
- EU 035 Fire Pump 1
- EU 051 Emergency Electric Generator
- EU 052 Emergency Electric Generator
- EU 058 East Diesel Fire Pump
- EU 059 Bldg 104 Diesel Generator
- SV 004
- SV 005
- SV 006
- SV 007
- SV 008
- SV 009
- SV 010
- SV 011
- SV 012
- SV 013
- SV 014

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Associated Items: SV 015
SV 016
SV 017
SV 018
SV 019
SV 020
SV 021
SV 022
SV 023
SV 024
SV 025
SV 027
SV 028
SV 029
SV 030
SV 031
SV 032
SV 033
SV 034
SV 035
SV 037
SV 051
SV 052
SV 058
SV 059

What to do	Why to do it
Fuel usage is limited to diesel fuel and natural gas.	Title I Condition: State Implementation Plan for SO2
Sulfur Content of Fuel: less than or equal to 0.05 percent by weight for diesel fuel.	Title I Condition: State Implementation Plan for SO2; meets requirements of Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent opacity once operating temperature has been attained (applies individually to each emission unit in GP 003).	Minn. R. 7011.2300, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: GP 004 Dc Boilers 4 and 5**Associated Items:** EU 049 Boiler 4

EU 050 Boiler 5

What to do	Why to do it
EMISSIONS LIMITS	hdr
Opacity: less than or equal to 20 percent except for one 6-minute period per hour of not more than 27 percent opacity.	40 CFR 60.43c(c)
OPERATING REQUIREMENTS	hdr
Sulfur content of fuel: less than or equal to 0.5 percent by weight for distillate oil.	40 CFR 60.42c(d)
REPORTING AND RECORDKEEPING REQUIREMENTS	hdr
Fuel supplier certifications shall include: i) the name of the oil supplier; and, ii) a statement from the oil supplier that the oil sulfur content is less than or equal to 0.50 percent by weight for distillate oil.	40 CFR 60.48c(f)
Record and maintain records of the amounts of each fuel combusted during each day for each individual boiler.	40 CFR 60.48c(g)
PERFORMANCE TESTS	hdr
Performance Test: due 180 days after Initial Startup to measure NO _x for Boiler #5 (EU 050). For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1, and Minn. R. 7017.2030, subp. 4
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 opacity for Boiler #5 (EU 050) while combusting distillate oil. For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	40 CFR 60.45c(a); Minn. R. 7017.2020, subp. 1, and Minn. R. 7017.2030, subp. 4
Performance Test: due 180 days after Startup with distillate oil, but not to exceed 60 days after achieving maximum capacity with distillate oil to measure Opacity for Boiler #4 (EU 049). For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1
ADDITIONAL REQUIREMENTS	hdr
If New Source Performance Standards or Minnesota Performance Standards change, in such a manner as to alter the emission limits, applicability thresholds, or requirements contained in this permit, prior to the installation of Boiler #5, the Permittee shall evaluate and, if necessary, reapply for a permit amendment.	Minn. R. 7007.0800, subp. 2
Boiler #5, individually, shall not exceed 84.0 MMBtu/hr in nameplate heat input capacity and 70,000 lbs/hr in nameplate rated steam capacity .	Title I Condition: to avoid classification as a major source under 40 CFR 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: GP 005 Disk Cleaning Process**Associated Items:** EU 053 Pre-Chem Sprin Dryers

EU 054 Pre-Chem Alcohol Baths

EU 055 Post-Chem Spin Dryers

EU 056 Post-Chem Alcohol Baths

What to do	Why to do it
A. SCRUBBER REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 0.4 inches of water column and less than or equal to 4.0 inches of water column for CE 006, CE 007 and CE 009. An alternate pressure drop range may be approved by the Agency based on performance testing.	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7007.0800, subp. 2 and 14
Water pressure: greater than or equal to 25 psi (gauge) and less than or equal to 45 psi (gauge) for CE 006, CE 007 and CE 009 as measured at a height of 4 feet from the base of each scrubber. An alternate water pressure range may be approved by the Agency based on performance testing.	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7008.0800, subp. 2 and 14
Record the pressure drop and inlet water pressure of each scrubber (CE 006, CE 007 and CE 009) once each week during which the scrubber and an automated pressure drop monitoring system is operated. If an automated pressure drop monitoring system is not operated on a scrubber, then record the pressure drop and inlet water pressure of that scrubber once each day of scrubber operation.	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7007.0800, subp. 2 and 14
If the Permittee operates an automated system to continuously monitor the pressure drop across a scrubber, the system will be designed to alarm the operator and shut down all emission units controlled by a scrubber if the pressure drop across the scrubber is not within the ranges specified in this permit. The Permittee shall keep a record of any instance where the pressure drop across a scrubber is not within the ranges specified in this permit.	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7007.0800, subp. 2 and 14.
Corrective Action: If a pressure drop or inlet water pressure is not within the ranges specified herein, the Permittee shall take corrective action as soon as possible (within 24 hours) to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7007.0800, subp. 2 and 14
Inspect quarterly, or as required by manufacturing specifications, all components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices and ducts. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices and ducts. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
Additional Scrubbers: The Permittee may add additional scrubbers to control VOC emissions from EU 053, EU 054, EU 055 or EU 056. Any scrubbers added must be designed to control VOC emissions by at least 90%. As required by Minn. R. 7007.1150(C), the Permittee shall submit a written notice to the MPCA.	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7007.1150(C)
B. ALCOHOL BATH & SPIN DRYER RESTRICTIONS	hdr
Alcohol Baths: The number of alcohol baths at the facility shall not exceed 14. Each alcohol bath shall be included in either EU 054 (vented to SV 054) or EU 056 (vented to SV 056).	Title I Condition: To avoid classification as a major source under 40 CFR 70.2 and 40 CFR 52.21
Alcohol Bath Contents: The contents of each alcohol bath shall not exceed 50% alcohol by volume.	Title I Condition: To avoid classification as a major source under 40 CFR 70.2 and 40 CFR 52.21
Spin Dryers: The number of spin dryers installed at the facility shall not exceed 14. Each spin dryer shall be included in either EU 053 (vented to SV 053) or EU 055 (vented to SV 055). EU 055 may include a maximum of seven (7) spin dryers. This condition applies only to spin dryers at the facility which follow alcohol baths in the disk manufacturing process.	Title I Condition: To avoid classification as a major source under 40 CFR 70.2 and 40 CFR 52.21
C. PERFORMANCE TESTING	hdr
Performance Test: due before end of each 60 months following Permit Issuance to measure the VOC emission rate (in lb/hr) from two of the following stack vents: SV 053, SV 054 or SV 056. The VOC collection efficiency from the corresponding wet scrubber (CE 006 for SV 053, CE 007 for SV 054 and CE 009 for SV 056) shall also be measured. Each stack vent and scrubber listed shall be tested at least once every 120 months.	Title I Condition: To avoid classification as a major source under 40 CFR 70.2 and 40 CFR 52.21; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

<p>General Performance Test (PT) Requirements:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>PT Notification (written): due 30 days before each Performance Test</p> <p>PT Plan: due 30 days before each Performance Test</p> <p>PT Pre-test Meeting: due 7 days before each Performance Test</p> <p>PT Report: due 45 days after each Performance Test</p> <p>PT Report - Microfiche: due 105 days after each Performance Test</p>	<p>Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2</p>
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TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 044 (Fabric Filter CE 001)**Associated Items:** EU 044 Lime Silo

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.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operation of CE 001: the Permittee shall capture all emissions from EU 044 and vent them to CE 001.	Minn. R. 7007.0800, subp. 14
Total Particulate Matter: greater than or equal to 85 percent collection efficiency for CE 001 to meet the total particulate matter emission limit in Minn. R. 7011.0715, subp. 1(A).	Minn. R. 7011.0715, subp. 3
Particulate Matter < 10 micron: greater than or equal to 85 percent collection efficiency for CE 001.	Control equipment requirement to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Check for visible emissions (during daylight hours) from the control equipment (CE 001) once each time the silo is loaded.	Minn. R. 7007.0800, subp. 4
Corrective Action: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 045 (Fabric Filter CE 002)**Associated Items:** EU 045 Metal Chip Collector

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.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operation of CE 002: the Permittee shall capture all emissions from EU 045 and vent them to CE 002.	Minn. R. 7007.0800, subp. 14
Total Particulate Matter: greater than or equal to 85 percent collection efficiency for CE 002 to meet the total particulate matter emission limit in Minn. R. 7011.0715, subp. 1(A).	Minn. R. 7011.0715, subp. 3
Particulate Matter < 10 micron: greater than or equal to 85 percent collection efficiency for CE 002.	Control equipment requirement to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Pressure Drop: greater than or equal to 0.2 inches of water column and less than or equal to 4.0 inches of water column	Monitoring of control equipment used to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging including structural components, housings, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Calibrate the pressure gauge annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
If necessary, the permittee shall apply for an amendment to update the pressure drop range given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after permit issuance.	Minn. R. 7007.1500, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 046 (Fabric Filter CE 003)**Associated Items:** EU 046 Router/Dust Collector

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.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operation of CE 003: the Permittee shall capture all emissions from EU 046 and vent them to CE 003.	Minn. R. 7007.0800, subp. 14
Total Particulate Matter: greater than or equal to 85 percent collection efficiency for CE 003 to meet the total particulate matter emission limit in Minn. R. 7011.0715, subp. 1(A).	Minn. R. 7011.0715, subp. 3
Particulate Matter < 10 micron: greater than or equal to 85 percent collection efficiency for CE 003.	Control equipment requirement to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Pressure Drop: greater than or equal to 0.2 inches of water column and less than or equal to 6.0 inches of water column	Monitoring of control equipment used to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging including structural components, housings, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Calibrate the pressure gauge annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
If necessary, the permittee shall apply for an amendment to update the pressure drop range given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after permit issuance.	Minn. R. 7007.1500, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 047 (Fabric Filter CE 004)**Associated Items:** EU 047 Router/Dust Collector

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.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operation of CE 004: the Permittee shall capture all emissions from EU 047 and vent them to CE 004.	Minn. R. 7007.0800, subp. 14
Total Particulate Matter: greater than or equal to 85 percent collection efficiency for CE 004 to meet the total particulate matter emission limit in Minn. R. 7011.0715, subp. 1(A).	Minn. R. 7011.0715, subp. 3
Particulate Matter < 10 micron: greater than or equal to 85 percent collection efficiency for CE 004.	Control equipment requirement to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Pressure Drop: greater than or equal to 0.2 inches of water column and less than or equal to 6.0 inches of water column	Monitoring of control equipment used to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging including structural components, housings, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Calibrate the pressure gauge annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
If necessary, the permittee shall apply for an amendment to update the pressure drop range given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after permit issuance.	Minn. R. 7007.1500, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 048 (Fabric Filter CE 005)**Associated Items:** EU 048 Router/Dust Collector

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.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Operation of CE 005: the Permittee shall capture all emissions from EU 048 and vent them to CE 005.	Minn. R. 7007.0800, subp. 14
Total Particulate Matter: greater than or equal to 85 percent collection efficiency for CE 005 to meet the total particulate matter emission limit in Minn. R. 7011.0715, subp. 1(A).	Minn. R. 7011.0715, subp. 3
Particulate Matter < 10 micron: greater than or equal to 85 percent collection efficiency for CE 005.	Control equipment requirement to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Pressure Drop: greater than or equal to 0.2 inches of water column and less than or equal to 6.0 inches of water column	Monitoring of control equipment used to avoid major source classification under 40 CFR 70.2; Minn. R. 7007.0800, subp. 2 and 14
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging including structural components, housings, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Calibrate the pressure gauge annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
If necessary, the permittee shall apply for an amendment to update the pressure drop range given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after permit issuance.	Minn. R. 7007.1500, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 053 Pre-Chem Spin Dryers (Wet Scrubber CE 006)**Associated Items:** EU 053 Pre-Chem Sprin Dryers

What to do	Why to do it
A. EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. POLLUTION CONTROL REQUIREMENTS	hdr
Operation of Wet Scrubber CE 006: The Permittee shall capture all emissions from EU 053 and vent them to Wet Scrubber CE 006.	Minn. R. 7007.0800, subp. 14
Volatile Organic Compounds: greater than or equal to 45 percent collection efficiency (see GP 005 for scrubber monitoring, maintenance and performance testing requirements)	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 054 Pre-Chem Alcohol Baths (Wet Scrubber CE 007)**Associated Items:** EU 054 Pre-Chem Alcohol Baths

What to do	Why to do it
A. EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. POLLUTION CONTROL REQUIREMENTS	hdr
Operation of Wet Scrubber CE 007: The Permittee shall capture all emissions from EU 054 and vent them to Wet Scrubber CE 007.	Minn. R. 7007.0800, subp. 14
Volatile Organic Compounds: greater than or equal to 90 percent control efficiency (see GP 005 for scrubber monitoring, maintenance and performance testing requirements).	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester
Permit Number: 10900006 - 005

Subject Item: SV 055 Post-Chem Spin Dryers

Associated Items: EU 055 Post-Chem Spin Dryers

What to do	Why to do it
A. EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

Subject Item: SV 056 Post-Chem Alcohol Baths (Wet Scrubber CE 009)**Associated Items:** EU 056 Post-Chem Alcohol Baths

What to do	Why to do it
A. EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. POLLUTION CONTROL REQUIREMENTS	hdr
Operation of Wet Scrubber CE 009: The Permittee shall capture all emissions from EU 056 and vent them to Wet Scrubber CE 009.	Minn. R. 7007.0800, subp. 14
Volatile Organic Compounds: greater than or equal to 90 percent collection efficiency (see GP 005 for scrubber monitoring, maintenance and performance testing requirements).	Title I Condition: To avoid major source classification under 40 CFR 70.2 and 40 CFR 52.21

TABLE B: SUBMITTALS

09/01/02

Facility Name: IBM - Rochester
Permit Number: 10900006 - 005

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

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

What to send	When to send	Portion of Facility Affected
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup. Submit the name and number of the emission unit and the actual date of initial startup (for Boiler #5). This notification shall also include: 1) the design heat input capacity of each boiler and identification of boilers fuels to be combusted; and, 2) the annual capacity factor at which the Permittee anticipates operating each boiler based on all fuels fired and based on each individual fuel fired.	GP004
Notification of the Anticipated Date of Initial Startup	due 30 days before Anticipated Date of Initial Startup, but no more than 60 days before. Submit the name and number of the emission unit and the anticipated date of initial startup (for Boiler #5). This notification shall include: 1) the design heat input capacity of each boiler and identification of boilers fuels to be combusted; and 2) the annual capacity factor at which the Permittee anticipates operating each boiler based on all fuels fired and based on each individual fuel fired.	GP004
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of the emission unit and the anticipated date of initial startup (for Boiler #5). This notification shall include: 1) the design input capacity of each boiler and identification of boilers fuels to be combusted; and 2) the annual capacity factor at which the Permittee anticipates operating each boiler based on all fuels fired and based on each individual fuel fired.	GP004
Notification of the date of Equipment Removal/Dismantlement	due 45 days after Startup of Boiler #1.	GP002
Testing Frequency Plan	due 60 days after Initial Performance Test for EU 050. The plan shall specify a testing frequency to measure opacity and NOx using the test data and MPCA guidance for EU050. In addition, the plan shall address a testing schedule for opacity of EU049. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written MPCA approval per Minn. R. 7017.2020, subp. 1.	GP004

TABLE B: RECURRENT SUBMITTALS

09/01/02

Facility Name: IBM - Rochester

Permit Number: 10900006 - 005

What to send	When to send	Portion of Facility Affected
Report	due 30 days after end of each calendar half-year following Permit Issuance. The report shall include a statement certifying that the records of fuel supplier certifications submitted represent all of the fuel combusted during the calendar half-year. Each report shall be postmarked by the 30th day following the end of the calendar half-year.	GP004
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 30 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. The report covers all deviations experienced during the calendar year.	Total Facility

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 10900006-005

This technical support document is for all the interested parties of the permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner/Operator Address and Phone Number	Facility Address (SIC Code: 3571)
International Business Machine Corporation Armonk, New York 10504	International Business Machine Corporation 3605 Highway 52 North Rochester, MN 55901 Olmsted County

1.2 Description of the Facility

The facility manufactures electronic digital computers and has production units that manufacture circuit boards and disks. This permit amends a State Total Facility Operating Permit. Emission units at the facility include four (4) boilers that have a combined heat input of 326 MMBtu/hr. This makes the facility subject to the 100 ton-per-year major source definition under 40 CFR 52.21 (fossil-fuel boilers totaling more than 250 MMBtu/hr heat input). The facility has accepted federally enforceable emission limits to maintain its NO_x and SO₂ emissions under 100 tons per year (tpy). Hence, 40 CFR 52.21 does not apply. The facility also has twenty-seven (27) emergency electric generators and two (2) fire pumps. Five (5) fabric filter baghouses control small sources of particulate.

This permit contains existing conditions cited as "Title I condition: State Implementation Plan." Existing permitted conditions are necessary to demonstrate compliance with the national ambient air quality standards for Sulfur Dioxide (SO₂). This facility is located in an area which is designated nonattainment for SO₂; however, the EPA has published a notice to redesignate the Rochester nonattainment area to attainment. Redesignation is scheduled to be effective on May 8, 2001. This redesignation will not impact this permit action.

1.3 Description of the Activities Allowed By This Permit Action

The current disk manufacturing process involves taking pre-supplied disks and polishing the disks to an acceptable quality using a water based polish. The polished disks are cleaned in baths using an aqueous system containing some acid, base, oxidizing agent and alcohol. After cleaning in the bath, the tray is moved into a spin dryer to remove excess liquid. The facility currently has 6 baths and 6 spin dryers. VOC emissions from the baths and spin dryers are currently controlled by three scrubbers. The current permit does not require the operation of the

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scrubbers since credit for the emissions reduction of the scrubbers is not necessary for the source to avoid classification as a major source under 40 CFR 52.21 and 40 CFR 70.2.

November 9, 2000 Application

The permit application for a major amendment was received on November 9, 2000 and requests approval to operate a total of 14 baths and 14 spin dryers. When operating 14 baths and spin dryers, VOC emission controls will be necessary to avoid classification as a major source under 40 CFR 52.21. Therefore, the permit will be amended to require the Permittee to control emissions from the baths and at least seven of the dryers with scrubbers. A maximum of seven dryers (designated at EU 055) will not be controlled by a scrubber. In addition, the alcohol concentration in the baths will be limited to 50 percent by volume. Requiring operation of the scrubbers will result in a reduction in annual potential VOC emissions from the facility.

February 12, 2001 Application

A permit application for a minor amendment was also received on February 12, 2001. Changes associated with this application will occur in three phases. In Phase I, a 266 HP Caterpillar diesel engine (EU 058) will be installed to replace EU 037, a 190 HP Cummins diesel engine. The engine will also be relocated. In Phase II, a 163 KW Caterpillar diesel engine/generator (EU 059) will be installed to replace EU 015, a 25 KW Ford natural gas engine/generator. The engine will also be relocated. EU 013, a 25 KW Ford natural gas engine/generator, will be removed. In Phase III, EU 16 (a 100 KW Allis Chalmers diesel engine/generator) will be relocated. EU 029, a 45 KW Ford diesel engine/generator and EU 14, a 60 KW Allis Chalmers diesel engine/generator, will both be removed. Since the permit already limits emissions to less than 100 tons per year, replacement of the engines will not result in an increase in the annual limited potential to emit from the facility.

March 22, 2001 Application

A permit application for an administrative amendment was received on March 22, 2001. This application requests that EU 040 (Production Unit 3) be removed from the permit and Celestica Wisconsin be removed as a Permittee.

2. Facility Emissions

The expected lb/hr change in emissions as a result of this permit action is shown below:

Unit	Pollutant (lb/hr change)					
	PM	PM10	SO₂¹	NO_x	VOC	CO
EU 058 (new)	0.48	0.48	0.08	6.84	0.56	1.47
EU 037 (removed)	-0.41	-0.10	-0.06	-5.79	-0.47	-1.25
EU 059 (new)	0.33	0.08	0.05	4.63	0.38	1.0
EU 015 (removed)	0	0	0	-1.44	0	-0.18
EU 013 (removed)	0	0	0	-1.44	0	-0.18
EU 029 (removed)	-0.17	-0.04	-0.03	-2.47	-0.20	-0.53
EU 014 (removed)	-0.19	-0.05	-0.03	-2.75	-0.22	-0.59
Net Change (lb/hr)²	0.04	0.04	0.01	-2.42	0.05	-0.26
Net Change (lb/hr)³	0.4	0.46	0.07	4.24	0.47	1.04

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- 1 The permit restricts the diesel sulfur content to 0.05% by weight, so a sulfur content of 0.05% by weight was used in the calculations.
- 2 Allowing for the removal of EU 013, 014 and 029.
- 3 Assuming that EU 013, 014 and 029 remain at the facility.

Since the equipment will be removed in phases, the permit does not reflect the removal of EU 013, EU 014 and EU 029.

1.4 Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

EU #	Emission Unit	PM tpy	PM ₁₀ tpy	SO ₂ Tpy	NO _x tpy	CO tpy	VOC Tpy	Pb Tpy
001-035, 049-052, 058 & 059	Boilers, Emergency Generators and Fire Pumps	8.7	8.7	99.0	99.0	73.3	6.9	0.0
038	Production Unit 1	0.0	0.0	0.0	0.0	0.0	.36	0.0
039	Production Unit 2	0.0	0.0	0.0	0.0	0.0	0.25	0.0
041	Production Unit 4	0.0	0.0	0.0	0.0	0.0	4.38	0.0
042	Production Unit 5	0.0	0.0	0.0	0.0	0.0	2.2	0.0
044	Lime Silo with Fabric Filter	3.8	3.8	0.0	0.0	0.0	0.0	0.0
045	Metal Chip Collector	7.5	7.5	0.0	0.0	0.0	0.0	0.0
046	Router #1 with Fabric Filter	0.7	0.7	0.0	0.0	0.0	0.0	0.0
047	Router #2 with Fabric Filter	0.7	0.7	0.0	0.0	0.0	0.0	0.0
048	Router #3 with Fabric Filter	0.6	0.6	0.0	0.0	0.0	0.0	0.0
053	Pre-Chem Spin Dryers	0.0	0.0	0.0	0.0	0.0	11.81	0.0
054	Pre-Chem Alcohol Baths	0.0	0.0	0.0	0.0	0.0	4.72	0.0
055	Post-Chem Spin Dryers	0.0	0.0	0.0	0.0	0.0	21.46	0.0
056	Post-Chem Alcohol Baths	0.0	0.0	0.0	0.0	0.0	4.72	0.0
FS 001	Roadway Dust	14.7	2.9	0.0	0.0	0.0	0.0	0.0
TK 001	Storage Tank	0.0	0.0	0.0	0.0	0.0	0.1	0.0

	PM tpy	PM ₁₀ Tpy	SO ₂ Tpy	NO _x tpy	CO tpy	VOC Tpy	Pb Tpy
Total Facility Limited Potential Emissions*	36.7	24.9	99.0	99.0	73.3	56.8	0.0
Total Facility Actual Emissions* *	8.9	7.1	46.8	38.3	20.7	8.2	0.0

* SO2 and NOx have 99 tpy limits remaining in place.

** Based on 1998 emissions.

Table 2. Facility (TF) and Permit Classification

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Classification	Major/Affected Source	*Synthetic Minor	*Minor
PSD		VOC, NO _x , PM, PM ₁₀	
NAAR		SO ₂ **	
Part 70 Permit Program		VOC, NO _x , SO ₂ , PM ₁₀	CO, Pb, Single HAP, Total HAP

* Refers to potential emissions that are less than those specified as major by 40 CFR 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

** EPA has published a notice to redesignate the Rochester nonattainment area to attainment. Redesignation is scheduled to be effective on May 8, 2001.

2. Regulatory and/or Statutory Basis

Operation of the scrubbers to control VOC emissions was not previously necessary to avoid classification as a major stationary source under 40 CFR 52.21. Uncontrolled VOC emissions from the alcohol baths and spin dryers will exceed 100 tons per year, so the requirement to control emissions with the scrubbers must be incorporated into the permit to avoid classification as a major stationary source under 40 CFR 52.21.

3. Technical Information

3.1 VOC Emissions from the Baths and Dryers

EU 054 and EU 056 will consist of a maximum of 7 baths each. EU 053 and EU 055 will consist of a maximum of 7 spin dryers each. Maximum potential VOC emissions from the facility are calculated as follows:

$$\begin{aligned}
 &\text{VOC emissions (EU 054 baths)} \\
 &= 1.54 \text{ lb/hr/bath}^1 (7 \text{ baths}) (1-0.90)^2 (8760 \text{ hr/yr}) (1 \text{ ton}/2,000 \text{ lb}) \\
 &= 4.72 \text{ tons/year}
 \end{aligned}$$

$$\begin{aligned}
 &\text{VOC emissions (EU 056 baths)} \\
 &= 1.54 \text{ lb/hr/bath}^1 (7 \text{ baths}) (1-0.90)^2 (8760 \text{ hr/yr}) (1 \text{ ton}/2,000 \text{ lb}) \\
 &= 4.72 \text{ tons year}
 \end{aligned}$$

$$\begin{aligned}
 &\text{VOC emissions (EU 053 spin dryers)} \\
 &= 0.70 \text{ lb/hr/dryer}^2 (7 \text{ dryers}) (1-0.45)^2 (8760 \text{ hr/yr}) (1 \text{ ton}/2,000 \text{ lb}) \\
 &= 11.81 \text{ tons/year}
 \end{aligned}$$

$$\begin{aligned}
 &\text{VOC emissions (EU 055 spin dryers)} \\
 &= 0.70 \text{ lb/hr/dryer}^2 (7 \text{ dryers}) (8760 \text{ hr/yr}) (1 \text{ ton}/2,000 \text{ lb}) \\
 &= 21.46 \text{ tons/year}
 \end{aligned}$$

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- 1 Based on stack test results for a pilot bath. The stack test results were 1.25 lb/hr, 1.26 lb/hr and 1.54 lb/hr for three runs. The highest result of the three runs is used for the calculations.
- 2 Based on stack testing conducted on 7/21/00 (test results extrapolated to 50% alcohol).
- 3 EU 053, 054 and 056 are controlled by scrubbers CE 006, 007 and 009, respectively. VOC emissions from EU 055 are not controlled. The permit will require a VOC collection efficiency of 45% for CE 006 and a VOC collection efficiency of 90% for CE 007 and 009 (see discussion under Section 3.2 below).

Total Controlled VOC emissions (baths and dryers) = $(4.72+4.72+11.81+21.46)$ tpy = 42.7 tpy

As can be seen in Table 1, maximum total facility-wide VOC emissions will be approximately 43 tons per year, which is below the PSD major source threshold of 100 tons per year.

3.2 Scrubber VOC Collection Efficiencies

EU 053, 054 and 056 are controlled by scrubbers CE 006, 007 and 009, respectively. Testing conducted on CE 007 indicates a VOC collection efficiency of approximately 97%. CE 009 has the same air to water ratio as CE 007 and is expected to achieve a similar collection efficiency. CE 006 has a higher air to water ratio and the expected VOC collection efficiency is calculated to be proportionately lower. The permit will require a VOC collection efficiency of 45% for CE 006 and a VOC collection efficiency of 90% for CE 007 and 009. Testing will be required to demonstrate these collection efficiencies.

3.3 Alcohol Content of the Baths

The Permittee has provided that the tanks will be limited to 50 percent alcohol concentration by volume. The actual alcohol concentration is considered by IBM to be confidential information. The stack tests were conducted with a tank concentration of less than 50 percent alcohol. The Permittee provides that the tank cannot exceed 50 percent alcohol concentration. The 50 percent alcohol solution is arguably a "process limitation." The concentration of alcohol is set by a process qualification certification procedure. Basically, parts which are manufactured into final products under go extensive testing to verify product quality and durability, etc. From this, a manufacturing procedure is developed which must be followed when the specific parts are manufactured. IBM's ISO 9001 procedures and internal controls require that the procedure is documented and maintained following strict and defined procedures. No deviations are allowed from the manufacturing procedure by which the products are qualified. Changes to these procedures must undergo re-qualification of the entire process, which takes place after management approval. Hence, an MPCA inspector has the ability to audit the procedures to ensure that the 50 percent alcohol concentration limit is being maintained.

4. Conclusion

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Based on the information provided by IBM, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 10900006-005 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Craig Thorstenson, Marshall Cole, Stuart Arkley
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Attachments: Calculations