

**AIR EMISSION PERMIT NO. 10900006- 004
IS ISSUED TO**

International Business Machine Corporation

IBM - Rochester
3605 Highway 52 North
Rochester, Olmsted County, Minnesota 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

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; True State Minor Amendment

Issue Date: April 25, 2000

Expiration: June 30, 2003

All Title I Conditions do not expire.

Carolina Schutt

Rodney E. Massey, P.E.
Director
South District

for

Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

BAB:lk

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

Table C: Compliance Schedule

Appendices: Attached and Referenced in Table A

NOTICE TO THE PERMITTEE:

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

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

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

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

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Certain requirements which have been determined not to apply are listed in Table A of this permit.

FACILITY DESCRIPTION:

The facility manufactures electronic digital computers and has production units that manufacture circuit boards and disks. Emission units at the facility include four boilers, that have a combined heat input of 250.8 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 10 tons-per-year. Hence, 40 CFR 52.21 does not apply.

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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

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: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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
Written 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: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
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)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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 015 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 026 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 036 Fire Pump 2
- EU 037 Fire Pump 3
- EU 049 Boiler 4
- SV 001
- SV 002
- SV 003
- SV 004
- SV 005
- SV 006
- SV 007

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Associated Items: 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 026
SV 027
SV 028
SV 029
SV 030
SV 031
SV 032
SV 033
SV 034
SV 035
SV 036
SV 037
SV 049

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
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: $\text{NOx} = [(Q_{ngb} * 0.00014 \text{ lb NOx/cf}) + (Q_r * 0.055 \text{ lb NOx/gal}) + (Q_{lp} * 0.019 \text{ lb NOx/gal}) + (Q_d * 0.020 \text{ lb NOx/gal}) + (H_{ng} * 0.003400 \text{ lb NOx/cf} * 849 \text{ cf/hr}) + (H_{df} * 0.61 \text{ lb NOx/gal} * 252.5 \text{ gal/hr}) + (Q_{df} * 0.61 \text{ lb NOx/gal})]$	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

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

<p>(continued from previous requirement) Where: Qngb = cubic feet (cf) of natural gas combusted in boilers Qr = gallons (gal) of residual oil combusted in boilers Qlp = gallons of LP gas combusted in boilers Qd = gallons of distillate oil combusted in boilers Hng = hours of operation with natural gas combusted in generators and fire pumps Hdf = hours of operation with diesel fuel combusted in generators and fire pumps Qdf = 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: $SO_2 = [(Qngb * 0.0000006 \text{ lb } SO_2/cf) + (Qr * 0.159 \text{ lb } SO_2/gal * Sr) + (Qlp * 0.00010 \text{ lb } SO_2/gal * Slp) + (Qd * 0.144 \text{ lb } SO_2/gal * Sd) + (Hng * 0.0000006 \text{ lb } SO_2/cf * 849 \text{ cf/hr}) + (Hdf * 0.008 \text{ lb } SO_2/gal * 252.5 \text{ gal/hr}) + (Qdf * 0.008 \text{ lb } SO_2/gal)]$ </p> <p>Where: Qngb = cubic feet (cf) of natural gas combusted in boilers Qr = gallons (gal) of residual oil combusted in boilers Qlp = gallons of LP gas combusted in boilers Qd = 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>Hng = hours of operation with natural gas combusted in generators and fire pumps Hdf = 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. Qdf = 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>
<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>	<p>Title I Condition: State Implementation Plan for SO2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

<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>	<p>Title I Condition: State Implementation Plan for SO2 (continued from previous requirement)</p>
--	---

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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

Associated Items: EU 001 Boiler 1

EU 002 Boiler 2

EU 003 Boiler 3

EU 049 Boiler 4

What to do	Why to do it
A. EMISSION LIMITS	hdr
Sulfur Dioxide: less than or equal to 144.12 lbs/hour using 24-hour Block Average (midnight to midnight) for any calendar day when oil is burned only in two boilers.	Title I condition: State implementation Plan for SO2
Sulfur Dioxide: less than or equal to 105.79 lbs/hour using 24-hour Block Average (midnight to midnight) for any calendar day when oil is burned only in three boilers.	Title I condition: State implementation Plan for SO2
Sulfur Dioxide: less than or equal to the limit determined by the following equation: $[(144.12 \cdot A) + (105.79 \cdot B)]/24$ using a 24-hr Block Average (midnight to midnight) for any calendar day when oil was burned in only two boilers and also was burned in three boilers during the same calendar day, where: A = total hours during the calendar day where oil was burned in two boilers B = total hours during the calendar day where oil was burned in three boilers	Title I condition: State implementation Plan for SO2
Sulfur Dioxide: less than or equal to 367.97 lbs/hour using 3-hour Average (block average) when oil is burned in three boilers.	Title I condition: State implementation Plan for SO2
Sulfur Dioxide: less than or equal to 303.57 lbs/hour using 1-Hour Average for any hour when oil is burned in three boilers.	Minn. R. 7009.0020
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 is limited to natural gas, residual oil, LP 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
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 oil was burned in two boilers during the previous day and oil was also burned in three 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) = $[(Ar \cdot 0.159 \cdot Sr) + (Ad \cdot 0.144 \cdot Sd) + (Alp \cdot 0.0001 \cdot Slp)]$ 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) Slp = 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, 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

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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 015 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 026 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 036 Fire Pump 2
EU 037 Fire Pump 3
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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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 026
SV 027
SV 028
SV 029
SV 030
SV 031
SV 032
SV 033
SV 034
SV 035
SV 036
SV 037

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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Subject Item: SV 043**Associated Items:** EU 043 Sludge Dryer

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. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.	Minn. R. 7011.0610, subp. 1(A)(2)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Subject Item: SV 044**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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Subject Item: SV 045**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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Subject Item: SV 046**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 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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Subject Item: SV 047**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 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

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

Subject Item: SV 048**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 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 B: SUBMITTALS

04/25/00

Facility Name: IBM - Rochester
Permit Number: 10900006 - 004

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

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

Send any application for a permit or permit amendment to:

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

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

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

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

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

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

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.	EU049
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.	EU049

TABLE B: RECURRENT SUBMITTALS

04/25/00

Facility Name: IBM - Rochester

Permit Number: 10900006 - 004

What to send	When to send	Portion of Facility Affected
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
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 10900006-004

This Technical Support Document (TSD) is for all the interested parties of the draft 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 (list both if different)	Facility Address (SIC Code: 3571)
International Business Corporation Armonk, New York 10504	International Business Corporation 3605 Highway 52 North Rochester, Minnesota 55901

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 non-expiring 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 thirty-one (31) emergency electric generators, three (3) fire pumps, and a natural gas fired dryer. Five (5) fabric filter baghouses control small sources of particulate.

This permit contains existing conditions cited as "Title I condition: State Implementation Plan." This facility is located in an area which is designated nonattainment for SO₂. Existing permitted conditions are necessary to demonstrate compliance with the national ambient air quality standards for Sulfur Dioxide (SO₂).

1.3 Description of the Activities Allowed By This Permit Action

The facility is proposing to modify the computer disk manufacturing process located within Buildings 110 and 111. The process involves taking pre-supplied disks and polishing the disks to an acceptable quality using a water based polish. The polished disks will be cleaned in baths using (an aqueous system) containing some acid, base, oxidizing agent, and alcohol (emission units 053, 054, 055, 056, and 057). The installation will add four heat treat furnaces, one slurry mixing hood, and eight cleaning baths. The installation will remove two disk plating lines.

This permit will allow the installation of eight (8) baths. Alcohol concentration in the baths will not exceed 50 percent by volume. The VOC emissions from the disk cleaning operations will be controlled with two scrubbers.

Permit Action Number:

Date: 1/21/2004

The polishing compound will be in the form of a wet slurry. Some particulate emissions may result during the mixing of the dry powder with water to create the slurry. It is estimated that the potential particulate emissions will be insignificant (less than 1 ton per year). To reduce the actual emissions, the Permittee will install a particulate control system consisting of a hood, bag filter, and HEPA filters (CE010).

An Environmental Assessment Worksheet (EAW) or an Environmental Impact Statement (EIS) has not been completed for this project. The activity authorized by the permit is not listed in Minn. R. 4431.4300 Mandatory EAW Categories or in Minn. R. 4410.4400 Mandatory EIS Categories.

1.4. Facility Emissions:

Table 1. Emissions Associated With the Modification

Pollutant	Potential to Emit from the modification (lb/hr)	Potential to Emit from the modification (TPY)	**Other contemporaneous emission increases/decreases (TPY)	Net Emission Change (TPY)	NSR/ 112(g) Threshold Level (TPY)	NSR/ MACT Review Required (Yes or No)
PM	0			0	100	no
PM10	0			0	100	No
SO2	0			0	100	No
NOx	0			0	100	No
VOC	12.32	53.96		53.96	100	No
CO	0			0		no

* NSR Threshold Level is 100 tpy to cross into major PSD source.

Table 2. Total Facility Potential to Emit Summary:

EU No.	Emission Unit Description	PM tpy	PM₁₀ Tpy	SO₂ Tpy	NO_x tpy	CO tpy	VOC Tpy	Pb tpy
001 – 037 & 049	Boilers, Emergency Generators and Fire Pumps	32.2	27.0	99.0	99.0	11.6	4.86	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
040	Production Unit 3	0.0	0.0	0.0	0.0	0.0	4.38	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	2.22	0.0
043	Sludge Dryer	0.0	0.0	0.0	0.2	0.0	0.0	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

Permit Action Number:

Date: 1/21/2004

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
054	Pre-Process Cleaners	0.0	0.0	0.0	0.0	0.0	26.98	0.0
056	Post-Process Cleaners	0.0	0.0	0.0	0.0	0.0	26.98	0.0
FS 001	Roadway Dust	22.4	21.1	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*	67.9	61.4	99.0	99.2	11.6	70.51	0.0
Total Facility Actual Emissions*	3.8	3.6	8.3	64.3	8.4	10.3	0.0

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

Table 2. Facility (TF) and Permit Classification

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

2. Regulatory and/or Statutory Basis

The increased emissions proposed by this permit amendment satisfy the moderate permit amendment applicability as set forth in Minn. R. 7007.1450. The emission increases are above the 9.13 lb/hr VOC increase, but no limits are needed to keep the PTE emissions below the PSD major threshold. Because the PTE does not need to be limited, there are no regulatory emission or operational limits.

3. Technical Information

1. This permit does not alter the existing 99 tpy NOX and SO2 emission limits for the entire facility.
2. This permit modification is a Minnesota moderate permit amendment. Minn. R. 7007.1450. The letter of approval authorizing construction was issued February 10, 2000.
3. The VOC emissions from the tanks were calculated as follows. Three (3) tests were conducted on a pilot bath. The test results were 1.25, 1.26, and 1.54 lbs per hour. The conservative test result of 1.54 lbs per hour (per bath) was used.

$$1.54 \text{ lbs VOC/hr} \times 8 \text{ bathes} \times 4.38 = 53.96 \text{ tons per year}$$

Permit Action Number:
Date: 1/21/2004

The increase of 53.96 tpy to the existing facility VOC emissions results in 70.51 tpy. This is below the 100 tpy PSD major threshold. Hence, this is a moderate permit amendment.

It is noted that the VOC emissions from the 8 baths will be emitted into one of two scrubbers.

4. The Permittee has provided that the tanks will be limited to 50 percent alcohol concentration by volume. 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, a MPCA inspector has the ability to audit the procedures to ensure that the 50 percent is being maintained.
5. It is estimated that the use of the two scrubbers will reduce the VOC emissions by 70 percent. These control efficiencies are not recognized in this permit. Hence, they are not used in the potential emission calculations.

As provided in the permit application, the Permittee has volunteered to install the scrubbers and baghouse filter. The control equipment has been entered into Delta. For this permit, the scrubber's control efficiency is not needed to make this permit amendment a moderate. Due to time constraints, the Permittee decided not to take control equipment emission reductions. In order to have done so would have required a major amendment. Because this control equipment was voluntarily utilized, there are no requirements for its utilization in this permit. If the Permittee eventually installs additional tanks, the Permittee will need to receive credit from the scrubbers, if they intend to remain a PSD non-major. That action would require a Minnesota major amendment. Based on the information provided, it is noted that with the ultimate installation of 14 tanks and permitted control equipment, the facility emissions will remain below 100 tons per year.

6. The VOC emissions changed in Production units 1 – 5. In 1993, the Permittee estimated the potential VOC emissions from Production Units 1 – 5 to be 26.5 tpy.

Due to better estimates from actual usage records, changes in chemicals (less VOC usage), and changes in processes, the VOC emission potential has decreased since 1993. The attached Table 1 contains a summary of all VOC usage in the facility (Production Units 1 – 5). These VOC changes are summarized in Table 2. It is also noted that VOC totals in Tables 1 and 2 are different from totals reflected in this TSD. That is because the Tables were constructed assuming that Permit #3 would have been effective prior to the issuance of this Permit #4.

To calculate the new VOC potentials, the Permittee used the greatest potential VOC usage (per pollutant), as reported in either the 1997 or 1998 emissions inventory that was submitted to the MPCA. This number was then divided by the 8000 actual hours in 1998. This value was then multiplied by 8760 to convert it into a potential. This results in 11.59 tons per year. This is not a preferred method to calculate PTE. Given the overall percentage of VOC from these sources and the amount below 100 tpy, this method was accepted for this permit amendment.

7. The VOC potential emissions from fuel burning has been calculated as follows. In the case of Boilers 1, 2, 3, and 4 (low NOx burner), natural gas was assumed to be used. The unrestricted PTE for NOx emissions (if natural gas is used in the boilers) is 166.54 tons per year. The overall facility is, however, restricted to 99 tons per year of NOx emissions. A correction factor was developed by the ratio of 99/166.54. This results in a safety factor of 0.594. In other words, the unrestricted PTE is restricted by 0.594, due to the 99 ton per year limit. This correction factor was then applied to the unrestricted emissions where fuel would be combusted. This resulted in a lowering of the previous permit's estimated VOC PTE from 22.41 tons per year to 17.89 tons per year. Natural gas emissions produced the highest VOC potential. LPG has a slightly higher VOC emissions. LPG also produces higher NOx emissions than natural gas. Accordingly, the use of natural gas results in a higher correction factor and higher VOC potential emissions (the worst case scenario).
8. The initial permit application sought the installation of 14 tanks. The installation of 14 tanks without a recognized control efficiency would have resulted in potential VOC emissions exceeding 100 tons per year. The Permittee revised the permit application to install 8 tanks at this time. As based on information provided by the Permittee, they are currently only funded to install 7 tanks. They estimate that they will not be installing the remaining 7 tanks for an additional 18 – 24 months (depending on the market demands).

4. Conclusion

Based on the information provided by International Business Corporation, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 10900006-004 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: Bruce C. Braaten

Attachments: VOC Calculations

Table 1 Potential Emission Summary

Table 2 Determination of New VOC PTE

Table 3 VOC Chemical Use

Permit Action Number:

Date: 1/21/2004