217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Fellowes, Inc.
Attn: Anna DeLeon
1789 Norwood Avenue
Itasca, Illinois 60143-1095

Application No.: 02070052
Applicant's Designation:
Subject: Corrugated Box Manufacturer
Date Issued: April 1, 2003
Location: 1789 Norwood Avenue, Itasca

I.D. No.: 043450AAI
Date Received: July 17, 2002

Expiration Date: April 1, 2008

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of flexographic printing operation, thermoplastics injection molding process, glue process, 2 cold cleaning solvent degreasers (systems), maintenance painting operation, miscellaneous chemical usage operation, power shred assembly, two diesel fuel oil storage tanks, miscellaneous storage and wastewater tanks, furnaces and heaters, #2 oil-fired emergency engine pump, #2 oil-fired emergency back up generator, and by products management operation controlled a cyclone and baghouse, pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 25 tons/year for volatile organic material (VOM)). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.

b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

c. This permit supersedes all operating permits issued for this location.

2. Emissions of volatile organic material (VOM) and operation of the flexographic printing operation and the thermoplastics injection mold process shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
2.04	20.35	2.04	20.35

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, manufacturers emission factors for the resins used in the mold presses, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding11months limits shall be determined from a running total of 12 months of data.

3. Emissions of volatile organic material, VOM, and operation of the glue process shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
0.11	1.0	0.11	1.0

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding11 months limits shall be determined from a running total of 12 months of data.

4. Emission and operation of the two cold cleaning degreasers (systems) shall not exceed the following limits:

Solvent Consumed		VOM Emissions	
(Gallons/Month)	(Gallons/Year)	(Tons/Month)	(Tons/Year)
19.2	192	0.07	0.64

Solvent consumption shall be determined from the following equation:

$$U = V - W \times C/100$$

Where:

U = Solvent consumed

V = Virgin solvent added to the process (gal)

W = Certified amount of waste shipped off for recycling (gal)

C = Certified VOM content of waste solvent (wt %)

These limits are based on maximum solvent consumed, solvent density and VOM content of 6.69 lb/gal, and emissions determined by material balance. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

5. Emissions of volatile organic material (VOM) and operation of the maintenance painting shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
0.1	0.96	0.1	0.96

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months limits shall be determined from a running total of 12 months of data.

6. Emissions of volatile organic material (VOM) and operation of the miscellaneous chemical usage operation shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
0.11	1.0	0.11	1.0

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding11 months limits shall be determined from a running total of 12 months of data.

7. This permit is issued based on negligible emissions of volatile organic material from the miscellaneous storage and wastewater tanks, power shred assembly, and two diesel fuel storage tanks. For this purpose, emissions shall not exceed nominal emission rates of 0.05 lb/hour and 0.1 ton/year.

8a. Emissions from and operation of the furnaces and heaters shall not exceed the following limits:

	Usage			Emission Factor	Emissions	
Material	(mmscf/Mo)	(mmscf/Yr)	Pollutant	(Lb/mmscf)	(T/Mo)	(T/Yr)
Natural Gas	28	251	NO_x	100	1.4	12.6
			CO	84	1.2	10.6
			PM	1.9	0.11	0.96
			VOM	5.5	0.08	0.69

These limits define the actual emissions of NO_x, CO, PM, and VOM and are based on maximum material usage and standard emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. Natural gas shall be the only fuel combusted in the furnaces and heaters. Use of any other fuel requires a permit revision.

9a. Emissions from the emergency engine pump shall not exceed the following limits:

Firing Rate (mmBtu/Hour)	Hours of Operation (Hours/Year)
6.7	50

Pollutant	Emission Factor (Lb/mmBtu)	Emissions (Lb/Hour)	Emissions (Tons/Year)
NO_x	4.41	29.6	0.74
CO	0.95	6.4	0.16
PM	0.31	2.1	0.05
SO_2	0.29	2.0	0.05
VOM	0.35	2.4	0.06

These limits define the actual emissions of NO_x, CO, PM, SO_2, and VOM and are based on maximum firing capacity, maximum hours of operation, and standard emission factors. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

b. Diesel fuel shall be the only fuel combusted in the generators. Use of any other fuel requires a permit change.

10a. Emissions from the emergency back up generator shall not exceed the following limits:

Firing Rate (mmBtu/Hour)	Hours of Operation (Hours/Year)
2.1	500

Pollutant	Emission Factor (Lb/mmBtu)	Emissions (Lb/Hour)	Emissions (Tons/Year)
NO_x	4.41	9.3	2.32
CO	0.95	2.0	0.5
PM	0.31	0.65	0.16
SO_2	0.29	0.61	0.15
VOM	0.35	0.74	0.18

These limits define the actual emissions of NO_x, CO, PM, SO_2, and VOM and are based on maximum firing capacity, maximum hours of operation, and standard emission factors. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

b. Diesel fuel shall be the only fuel combusted in the generators. Use of any other fuel requires a permit change.

11. This permit is issued based on negligible emissions of particulate matter from the byproducts management operation. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

12. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.

13. Pursuant to 35 Ill Adm. Code 218.401 (a), any coating or ink applied at any time to the flexographic printing lines shall not exceed the following VOM content limitations:

    a. Forty percent VOM by volume of the coating and ink (minus water and any compounds which are specifically exempted from the definition of VOM), or

    b. Twenty-five percent VOM by volume of the volatile content in the coating and ink.

14. The Permittee shall perform the following recordkeeping and reporting requirements for flexographic printing lines, pursuant to 35 Ill. Adm. Code 218.404(c) to show compliance with the emission limitations and control requirements of to 35 Ill. Adm. Code 218.401:

    a. The Permittee shall collect and record all of the following information each day for each printing line and maintain the information at the source for a period of three years:

        i. The name and identification number of each coating and ink as applied on each printing line.

        ii. The VOM content of each coating and ink as applied each day on each printing line.

    b. The Permittee shall notify the Illinois EPA in the following instances:

        i. Any record showing violation of Section 218.401(a) of this Part shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

ii. At least 30 calendar days before changing the method of compliance with Section 218.401 of this Part from Section 218.401(a) of this Part to Section 218.401(b) or (c) of this Part, the owner or operator shall comply with all requirements of subsection (d)(1) or (e)(1) of this Section, respectively. Upon changing the method of compliance with Section 218.401 of this Part from Section 218.401(a) of this Part to Section 218.401(b) or (c) of this Part, the owner or operator shall comply with all requirements of subsection (d) or (e) of this Section, respectively.

15. Pursuant to 35 Ill Adm. Code 218.182 (c), the Permittee shall not operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F).

16. The Permittee shall comply with the following operating requirements for cold cleaning degreasers, pursuant to 35 Ill. Adm. Code 218.182:

a. Waste solvent shall be stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

b. The cover of the degreaser shall be closed when parts are not being handled and parts are drained until dripping ceases;

c. The degreaser must be equipped with a cover which is closed whenever parts are not being handled in the cleaner;

d. The degreaser shall be equipped with a device for draining cleaned parts;

e. A permanent conspicuous label summarizing the operating procedure must be affixed to the degreaser; and

f. If a solvent spray is used, the degreaser must be equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

17. The Permittee shall maintain monthly records of the following for cold cleaning degreasers, pursuant to 35 Ill. Adm. Code 218.182:

a. The name and address of the solvent supplier;

b. The date of purchase;

c. The type of solvent; and

d. The vapor pressure of the solvent measured in mmHg at 20°C (68°F).

18. The Permittee shall maintain monthly records of the following items:

a. Amount of each VOM/HAP containing material used in the flexographic printing operation, thermoplastics injection molding process, maintenance painting operation, glue process, and miscellaneous chemical usage operation (ton/mo and ton/yr or gal/mo and gal/yr);

b. VOM and HAP content of each VOM/HAP containing material used in the flexographic printing operation, thermoplastics injection molding process, maintenance painting operation, glue process, and miscellaneous chemical usage operation (percent weight or lb VOM/gal);

c. Calculations of VOM/HAP usage for the flexographic printing operation, thermoplastics injection molding process, maintenance painting operation, glue process, and miscellaneous chemical usage operation. The following equations shall be used to calculate VOM/HAP usage and emissions:

$$Te = \sum_{i}^{n} AiBi$$

Where:

Te = VOM/HAP usage/emissions in units of lb/mo

n = Number of different VOM/HAP containing material used each month

i = Subscript denoting an individual VOM/HAP containing material used

Ai = weight percent of VOM and HAP of each VOM/HAP containing material used each month (% weight or lb/gal)

Bi = Amount of each VOM/HAP containing material used each month in units of lb/mo or gal/mo

d. Amount of solvent consumed in the degreasers by keeping records of the virgin solvent added to the process (gallons), certified amount of waste shipped off for recycling (gallons), certified VOM content of waste solvent (wt %), and using the equation in Condition 4 (gallons/month and gallons/year);

e. Natural gas usage for the furnaces and heaters (mmscf/month and mmscf/year);

f. Hours of operation for the emergency engine pump for fire water and the emergency back up generator (hours/month and hours/year); and

g. Detailed calculations of plant wide VOM and HAP emissions (tons/month and tons/year).

19. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

20. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

21. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

22. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year:

a. Amount of each VOM/HAP containing material used in the flexographic printing operation, thermoplastics injection molding process, maintenance painting operation, and clean up operations (tons/month and tons/year or gallons/month and gallons/year);

b. VOM and HAP content of each VOM/HAP containing material used in the flexographic printing operation, thermoplastics injection molding process, maintenance painting operation, and clean up operations (percent weight or lb VOM/gallon);

c. Calculations of VOM/HAP usage for the flexographic printing operation, thermoplastics injection molding process, maintenance painting operation, and clean up operations;

d. Each month's, monthly and annual VOM emissions for the preceding calendar year (i.e., preceding 12 months); and

e. Dates that the plant exceeded the annual usage or VOM limitations, if applicable.

If there have been no exceedances during the prior calendar year, the Annual Emission Report shall include a statement to that effect.

It should be noted that the grinding, milling, machining, shotblasting and sanding, and welding equipment are exempt from state permit requirements, pursuant to 35 Ill. Adm. Code 201.146(aa) and (y), respectively.

If you have any questions on this, please call Tara T. Nguyen-Ede at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:TNE:psj

cc: Illinois EPA, FOS Region 1
Illinois EPA, Compliance Section
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from corrugated box manufacturing facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are well below the levels, e.g., 25 tons/year for volatile organic material (VOM) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

1. Emissions of volatile organic material (VOM) and operation of the flexographic printing operation and the thermoplastics injection mold process shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
2.04	20.35	2.04	20.35

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, manufacturers emission factors for the resins used in the mold presses, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding11months limits shall be determined from a running total of 12 months of data.

2. Emissions of volatile organic material, VOM, and operation of the glue process shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
0.11	1.0	0.11	1.0

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding11 months limits shall be determined from a running total of 12 months of data.

3. Emission and operation of the two cold cleaning degreasers (systems) shall not exceed the following limits:

Solvent Consumed		VOM Emissions	
(Gallons/Month)	(Gallons/Year)	(Tons/Month)	(Tons/Year)
19.2	192	0.07	0.64

Solvent consumption shall be determined from the following equation:

$$U = V - W \times C/100$$

Where:

U = Solvent consumed

V = Virgin solvent added to the process (gal)

W = Certified amount of waste shipped off for recycling (gal)

C = Certified VOM content of waste solvent (wt %)

These limits are based on maximum solvent consumed, solvent density and VOM content of 6.69 lb/gal, and emissions determined by material balance. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

4. Emissions of volatile organic material (VOM) and operation of the maintenance painting shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
0.1	0.96	0.1	0.96

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months limits shall be determined from a running total of 12 months of data.

5. Emissions of volatile organic material (VOM) and operation of the miscellaneous chemical usage operation shall not exceed the following limits:

VOM Usage		VOM Emissions	
(Tons/Month)	(Tons/Year)	(Tons/Month)	(Tons/Year)
0.11	1.0	0.11	1.0

These limits define the potential emissions of VOM and are based on maximum material usages, individual VOM content, and VOM usage as determined by the equation in condition 18(c). Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding11 months limits shall be determined from a running total of 12 months of data.

6. This permit is issued based on negligible emissions of volatile organic material from the miscellaneous storage and wastewater tanks, power shred assembly, and two diesel fuel storage tanks. For this purpose, emissions shall not exceed nominal emission rates of 0.05 lb/hour and 0.1 ton/year.

7a. Emissions from and operation of the furnaces and heaters shall not exceed the following limits:

Material	Usage (mmscf/Mo)	Usage (mmscf/Yr)	Pollutant	Emission Factor (Lb/mmscf)	Emissions (T/Mo)	Emissions (T/Yr)
Natural Gas	28	251	NO_x	100	1.4	12.6
			CO	84	1.2	10.6
			PM	1.9	0.11	0.96
			VOM	5.5	0.08	0.69

These limits define the actual emissions of NO_x, CO, PM, and VOM and are based on maximum material usage and standard emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. Natural gas shall be the only fuel combusted in the furnaces and heaters. Use of any other fuel requires a permit revision.

8a. Emissions from the emergency engine pump shall not exceed the following limits:

Firing Rate (mmBtu/Hour)	Hours of Operation (Hours/Year)
6.7	50

Pollutant	Emission Factor (Lb/mmBtu)	Emissions (Lb/Hour)	Emissions (Tons/Year)
NO_x	4.41	29.6	0.74
CO	0.95	6.4	0.16
PM	0.31	2.1	0.05
SO_2	0.29	2.0	0.05
VOM	0.35	2.4	0.06

These limits define the actual emissions of NO_x, CO, PM, SO_2, and VOM and are based on maximum firing capacity, maximum hours of operation, and standard emission factors. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

b. Diesel fuel shall be the only fuel combusted in the generators. Use of any other fuel requires a permit change.

9a. Emissions from the emergency back up generator shall not exceed the following limits:

Firing Rate (mmBtu/Hour)	Hours of Operation (Hours/Year)
2.1	500

Pollutant	Emission Factor (Lb/mmBtu)	Emissions (Lb/Hour)	Emissions (Tons/Year)

NO_x	4.41	9.3	2.32
CO	0.95	2.0	0.5
PM	0.31	0.65	0.16
SO_2	0.29	0.61	0.15
VOM	0.35	0.74	0.18

These limits define the actual emissions of NO_x, CO, PM, SO_2, and VOM and are based on maximum firing capacity, maximum hours of operation, and standard emission factors. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

b. Diesel fuel shall be the only fuel combusted in the generators. Use of any other fuel requires a permit change.

10. This permit is issued based on negligible emissions of particulate matter from the byproducts management operation. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

11. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.

TNE:psj