

217/782-2113

CONSTRUCTION PERMIT -- REVISED

PERMITTEE

MeadWestvaco - Chicago Facility
Attn: Mike Hembrough
9540 South Dorchester Avenue
Chicago, Illinois 60628

Application No.: 01080013 I.D. No.: 031600CKM
Applicant's Designation: FLEXOPRESS Date Received: October 17, 2002
Subject: New Flexographic Press
Date Issued: October 28, 2002
Location: 9540 South Dorchester Avenue, Chicago, 60628

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a flexographic press as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 UNIT SPECIFIC CONDITIONS

1.1 Unit 01 - Flexographic Printing Line

1.1.1 Description

01 - The new printing press will be used to print paper board to produce cartons for canned and bottle beverages. The press central impression (CI) drum of the press has ten printing stations. Four to six print stations would be typically used to print different colors for any given order. Associated with each of the printing stations, is a between color dryer (BCD) to partially dry each color prior to printing the next color.

After the paper board is printed on the CI drum, it is directed through the bridge dryer box to complete drying.

The paperboard then goes to a backside print station, in which one or two colors can be printed on the backside of the web if the particular order requires any backside printing. The backside printer has a single dryer box for drying.

The web is then directed into a casting print station, which is capable of applying two different varnishes. There is a single dryer box after the first varnish is applied to partially dry it prior to the second varnish. After the second varnish is applied, the web is directed to a final dryer box to completely dry the web.

Each of the various dryers are served by three separate dryer systems. Each system consists of fresh air supply from above the roof, supply blower to feed air to the dryer system, natural gas burner downstream from supply blower, dryer boxes, and exhaust blower to extract hot air from dryer boxes.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
01	Flexographic Printing Press #3120 with Natural Gas-Fired Drying Systems (Total Capacity: 7.5 mmBtu/hour)	June, 2002	None

1.1.3 Applicability Provisions and Applicable Regulations

- a. The "affected printing line" for the purpose of these unit-specific conditions, is a flexographic press identified in Condition 1.1.1 and 1.1.2.
- b. Each affected printing line is subject to the requirements of 35 IAC Subpart H: Printing and Publishing. Each affected printing line shall comply with the limitations of 35 IAC 218.401(a) (2) as addressed in 35 IAC 218.401(b) (2).
- c. Each affected printing line is subject to 35 IAC 212.321(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified

in subsection (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321(a)].

1.1.4 Non-Applicability of Regulations of Concern

- a. The affected printing lines are not subject to 35 IAC 218.204(c), Coating Operations - Paper Coating, as the paper coating limitation does not apply to a line on which printing is performed which complies with the emission limitations in 35 IAC 218.401 [35 IAC 218.204(c)].
- b. The affected printing lines are not subject to the requirements of 35 IAC 218 Subpart G: Use of Organic Materials because they are subject to 35 IAC 218.401 [35 IAC 218.402(b)].
- c. This permit is issued based on the net increase of VOM emissions from (1) the addition of affected printing line #3120 and (2) removal of line 1372, being 24.9 tons per year. Thus no major modification under 35 IAC 203 applies.

1.1.5 Operation and Control Requirements

- a. Natural gas shall be the only fuel fired in the drying system of each affected printing line.
- b. Usage of VOM containing inks, varnish and solvents shall not exceed the following limits:

	VOM	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Inks, Varnish, and Solvents	5.0	30.8

Note: Due to the variable nature of VOM contained in inks, varnishes and solvent, specific quantities of the materials are not feasible. As a surrogate measure, VOM contained in the materials is used instead as the limitations.

1.1.6 Emission Limitations

The affected printing lines are subject to the following:

- a. Each affected printing line complying by 35 IAC 218.401(b)(2) shall not apply varnishes or inks unless the weighted average, by volume, VOM content of all varnishes and inks as applied each day does

not exceed twenty-five percent VOM by volume of the volatile content in the varnish and ink.

- b. Emissions of VOM from the affected printing line (#3120) shall not exceed the following emissions limitations. Compliance with the annual limit shall be addressed by a running total of 12 months of data.

VOM Emissions	
<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
5.0	30.8

- c. The Permittee shall utilize the automatic wash system of the new flexographic press (#3120), that utilizes water and low VOM cleaning material, in such a manner as to minimize the use of material containing VOM, including performing cleanup while the inks are still wet.
- d. Emissions of NO_x and VOM from the affected printing line drying oven (#3120) shall not exceed the following limitations.

	<u>(Lbs/Hour)</u>	<u>(Tons/Year)</u>
NO _x	0.75	3.3
VOM	0.04	0.2

1.1.7 Testing Requirements

The VOM content of varnishes and inks shall be determined by the applicable test methods and procedures specified in 35 IAC 218.105(a) [35 IAC 218.401(a)].

1.1.8 Monitoring Requirements

None

1.1.9 Recordkeeping Requirements

- a. The Permittee shall collect and record all of the following information each day for each affected printing line: [35 IAC 218.404(d) (2)]
 - i. The name and identification number of each VOM containing material used.
 - ii. The VOM content (wt %) of each VOM containing material used.

- iii. The usage of each VOM containing material, (lb/day or gal/day).
 - iv. The daily-weighted average VOM content of all varnishes and inks as applied on each affected printing line.
 - v. VOM emissions calculated in accordance with the procedures given in Condition 1.1.12 (lb/day and ton/yr).
- b. The Permittee shall collect and record all of the following information for the printing line dryers and maintain the information at the source for a period of three years:
- i. Fuel usage either directly measured or allocated from total facility gas usage using reasonable engineering estimates (mmscf/yr).
 - ii. Fuel combustion emissions calculated in accordance with the procedures given in Condition 1.1.12 (ton/yr).

1.1.10 Reporting Requirements

- a. The Permittee shall notify the Illinois EPA when construction of the affected printing line (#3120) begins.
- b. The Permittee shall notify the Illinois EPA in the following instances:
 - i. Any record showing violation of Section 218.401(b) (2); as specified by Condition 1.1.3(b) shall be reported by sending a copy of such record to the Illinois EPA within 30 days following the occurrence of the violation.
 - ii. At least 30 calendar days before changing the method of compliance with 35 IAC 218.401 from 35 IAC 218.401(b) to 35 IAC 218.401(a) or 35 IAC 218.401(c), the Permittee shall comply with all requirements of 35 IAC 218.404(c) (1) or (e) (1), respectively. Upon changing the method of compliance with 35 IAC 218.401 from 35 IAC 218.401(b) to 35 IAC 218.401(a) or (c), the Permittee shall comply with all requirements of 35 IAC 218.404(c) or (e), respectively.

- c. The Permittee shall also promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected printing line with the applicable requirements. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.1.12 Compliance Procedures

- a. Compliance with Condition 1.1.6 shall be addressed by the testing requirements of Condition 1.1.7 and the recordkeeping required by Condition 1.1.9.
- b. Compliance with Condition 1.1.3(c) is assumed to be achieved by the normal work practices and maintenance activities inherent in the operation of the affected printing lines.
- c. Compliance with Condition 1.1.6(a) for each affected printing line shall be addressed by the recordkeeping requirements of Condition 1.1.9 and the formula given below: The following equation shall be used to determine if the weighted average VOM content of all varnishes and inks as applied each day on the affected printing line exceeds the limitation of twenty-five percent VOM by volume of the volatile content in the varnish and ink, specified by 35 IAC 218.401(a) (2) :

$$VOM_{(i) (B)} = \frac{\sum_{i=1}^n C_i L_i V_{vmi}}{\sum_{i=1}^n L_i V_{vmi}}$$

Where:

$VOM_{(i) (B)}$ = The weighted average VOM content in units of percent VOM by volume of the volatile content of all varnish and inks used each day;

i = Subscript denoting a specific varnish or ink as applied;

- n = The number of different varnishes and/or inks as applied each day on each affected printing line;
- C_I = The VOM content in units of percent VOM by volume of the volatile matter in each varnish or ink as applied;
- L_i = The liquid volume of each varnish or ink as applied in units of 1 (gal) and
- V_{vmi} = The volume fraction of volatile matter in each varnish or ink as applied.

Note: This permit does not address other compliance options under 35 IAC 218.204 and 218.401 that are not relevant for the affected printing line.

- d. i. Compliance with Condition 1.1.6(b) for each affected printing line shall be addressed by the recordkeeping requirements of Condition 1.1.9 and the formula(s) given below:

$$E_v = \sum_{i=1}^n C_i W_i$$

Where:

- v = Printing Line Identification
- n = The total number of VOM containing materials applied on affected printing line v
- E_v = Total VOM emissions from affected printing line v
- C_i = Quantity of VOM containing material, i, used on affected printing line v each day (lb/day)
- W_i = VOM content of VOM containing material, i applied on affected printing line v each day (wt % VOM)

- ii. Compliance with the annual limit for each affected printing line shall be addressed on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

- e. Compliance with Condition 1.1.6(d) for the affected printing line shall be addressed by the recordkeeping requirements of Condition 1.1.9 and the formula(s) given below:

$$E_p = FP_p * \left(\frac{\text{ton}}{2,000 \text{ lb}} \right)$$

Where:

- E_p = Emissions of pollutant P (ton)
- F = Natural gas usage (mmscf)
- P_p = Appropriate emission factor for pollutant P (see below)

Emission factors for natural gas combustion units with maximum firing rates from 0.3 mmBtu/hr to less than 10 mmBtu/hr from Fifth Edition of AP-42

<u>Pollutant Type</u>	<u>Emission Factor (lb/mmscf)</u>
NO _x	100
VOM	5.5

- 2a. Flexographic press #3120 may be operated under this construction permit until renewal of the CAAPP permit.
- b. Existing press #1372 shall be permanently removed from service within 180 days after startup of press #3120.
- 3. The Permittee is allowed to operate under this construction permit until the CAAPP permit is revised or renewed.

Please note that this permit has been revised to allow operation under this construction permit (see Condition 3).

If you have any questions on this, please call Bob Smet at 217/782-2113.

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

DES:RPS:psj

cc: Region 1

Table 1: Contemporaneous Change in VOM Emissions (tons/year)

Permitted project emissions:

New Press #3120 31.0

Contemporaneous emissions increase

None 0

Contemporaneous emissions decreases

Removal of Press #1372 (Permit 93080053) - 6.1

Net: 24.9 tons/yr