

CONSTRUCTION PERMIT

Draft

PERMITTEE

Jefferson Smurfit Corporation (U.S.)
Attn: Peter W. Jaeger
400 East North Avenue
Carol Stream, Illinois 60188

Application No.: 01080015 I.D. No.: 043020AAC
Applicant's Designation: Date Received: August 1, 2001
Subject: Sheet-fed Non-heatset Offset Lithographic Printing Press
Date Issued: ---
Location: 400 East North Ave., Carol Stream

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a new sheet-fed non-heatset offset lithographic printing 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 Sheet-Fed Offset Lithographic Printing Lines

1.1.1 Description

The new sheet-fed non-heatset offset lithographic printing press is going to be used to print on boxboard and paperboard substrate. Infrared drying lights or hot and cold air knives are used to quicken the drying times of the inks, varnishes, and coatings.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
5A	Sheet-Fed Offset Lithographic Printing Press 5A	None

1.1.3 Applicability Provisions and Applicable Regulations

- a. An affected press for the purpose of these unit specific conditions, is the new sheet-fed non-heatset offset lithographic printing press as described in Condition 1.1.1 and 1.1.2.
- b. The affected press is subject to 35 IAC 212.321(a), which requires that:

The Permittee shall not 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 [35 IAC 212.321(a)].

- c. The Permittee shall not operate the affected press unless the following conditions are complied with [35 IAC 218.407(a)]:
 - i. A. The VOM content of the as-applied fountain solution is 8.5% or less, by volume, and the temperature of the fountain solution is maintained below 15.6EC (60EF), measured at the reservoir or the fountain tray; or
 - B. The VOM content of the as-applied fountain solution is 5 percent or less, by volume and contains no alcohol.
 - ii. The cleaning solution shall meet one of the following requirements:
 - A. The VOM content of the as-used cleaning solution is less than or equal to 30 percent, by weight; or
 - B. The VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20EC (68EF).
 - iii. The VOM containing cleaning materials, including used cleaning towels, associated with any lithographic printing line shall be kept, stored and disposed of only in closed containers.
- d. If coating operations are performed, the affected press shall comply with one of the following for the coating operation. For this purpose, coating means any protective decorative or functional coating applied on paper, plastic film or metallic foil, as defined in 35 IAC 211.4470, but does not include overprinting, which is considered part of the printing operations:
 - i. The VOM content of the coating shall not exceed the following limit: [35 IAC 218.401].
 - A. Forty percent VOM by volume of the

coating (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.

ii. The VOM content of the coating shall not exceed the following limit. This limit is expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator [35 IAC 218.204 (c)].

<u>kg/liter</u>	<u>lbs/gallon</u>
0.28	2.3

iii. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition.

e. The affected press is subject to 35 IAC 218.301, Use of Organic Material, which provides that the Permittee shall not cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in 35 IAC 215.302 and with the following exception: if no odor nuisance exists the limitation shall apply only to photochemically reactive material. This rule will only apply in the events that the Permittee complies with 35 IAC 218.401. However the affected press will not be subject to 35 IAC 218.301, when complies with 35 IAC 218.204. [35 IAC 218.209].

1.1.4 Non-Applicability of Regulations of Concern

a. The affected press is not a modification subject to 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM) because the net emissions of VOM from the affected press would be less than 25 tons per year (See Condition 1.1.6(b)).

b. The affected press is not a modification subject to Section 112(g), Hazardous Air Pollutants (HAPs), because emissions from HAPs are less than 10 tons/year for single HAP and less than 25 tons/year for all combined HAPs.

1.1.5 Operational and Production Limits and Work Practices

At all times, the Permittee shall, to the extent practicable, maintain and operate the affected press, in a manner consistent with good air pollution control practice for minimizing emissions.

1.1.6 Emission Limitations

- a. Emissions of VOM from the affected press and emission of the existing lithographic printing press #2 combined shall not exceed 10 tons/month and 39.5 tons/year.

Note: Existing printing press #2, by itself, shall not exceed VOM emission of 4.0 tons/month and 24.9 tons/year, as limited by Construction Permit 99030028.

- b. Emissions of VOM from the new press #5A and existing presses #2, #3 and #4 combined shall not exceed 15 tons/month and 74.5 tons/year. This limit is established to make the emission reduction associated with the shutdown of presses #1 and #5 in 1999 permanent and enforceable.
- 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 (running 12 month total).

1.1.7 Testing Requirements

- a. Upon request by the Illinois EPA the VOM content of inks, fountain solutions, fountain solution additives, cleaning solutions and other VOM containing materials (such as coating used on the offset presses at the source shall be determined according to USEPA Reference Method 24 specified in 40 CFR 60 Appendix A, pursuant to 35 IAC 218.105(a).
- b. Upon request by the Illinois EPA, the composite partial vapor pressure of cleaning solutions complying with the vapor pressure requirements shall be tested in accordance with 35 IAC 218.110.
- c. The manufacturer's specifications for VOM contents of materials may be used to fulfill the testing requirements if such manufacturer's specifications are results of tests of the VOM content conducted in accordance with methods specified in 35 IAC 218.105(a) provided, however, Method 24 shall be used to determine

compliance.

1.1.8 Monitoring Requirements

- a.
 - i. If the Permittee is relying on the temperature of the fountain solution used on the affected press to demonstrate compliance shall install, maintain, and continuously operate a temperature monitor of the fountain solution in the reservoir or fountain tray of the press, as applicable [35 IAC 218.410(a)(1)].
 - ii. The temperature monitor must be attached to an automatic, continuous recording device such as strip chart, recorder, or computer, with at least the same accuracy, that is installed, calibrated and maintained in accordance with the manufacturer's specifications. If the automatic, continuous recording device malfunctions, the Permittee shall record the temperature of the fountain solution at least once every two operating hours. The automatic, continuous recording device shall be repaired or replaced as soon as practicable [35 IAC 218.410(a)(2)].
- b. Fountain Solution Monitoring Requirements

The following monitoring requirements shall be performed according to 35 IAC 218.410 for the fountain solution used on the affected press. The Permittee shall comply with one of the three options:

- i. Maintain records of the VOM content of the fountain solution in accordance with 35 IAC 218.411(c)(2)(C) [Condition 7.2.9(a)(ii)(A) of this permit]; or
- ii. Take a sample of the as-applied fountain solution from the fountain tray or reservoir, as applicable, each time a fresh batch of fountain solution is prepared or each time VOM is added to an existing batch of fountain solution in the fountain tray or reservoir, and determine compliance with the VOM content limitation of the as-applied fountain solution by using one of the following methods:
 - A. With a refractometer or hydrometer with a visual, analog, or digital

readout and with an accuracy of 0.5 percent. The refractometer or hydrometer must be calibrated with a standard solution for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications, against measurements performed to determine compliance. The refractometer or hydrometer must be corrected for temperature at least once per 8-hour shift or once per batch of fountain solution prepared or modified, whichever is longer; or

B. With a conductivity meter if it is demonstrated that a refractometer and hydrometer cannot distinguish between compliant and noncompliant fountain solution for the type and amount of VOM in the fountain solution. A source may use a conductivity meter if it demonstrates that both hydrometers and refractometers fail to provide significantly different measurements for standard solutions containing 95 percent, 100 percent and 105 percent of the applicable VOM content limit. The conductivity meter reading for the fountain solution must be referenced to the conductivity of the incoming water. A standard solution shall be used to calibrate the conductivity meter for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications.

iii. For fountain solutions to which VOM is added at the source with automatic feed equipment, determine the VOM content of the as-applied fountain solution based on the setting of the automatic feed equipment, which makes additions to VOM up to a pre-set level. The equipment used to make automatic additions must be installed, calibrated, operated and maintained in accordance with manufacturer's specifications.

c. Cleaning Solution Monitoring Requirements

If the Permittee relies on the VOM content of the cleaning solution used on the affected press to comply with 35 IAC 218.407(a)(4)(A) must:

- i. For cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM):
 - A. Install, operate, maintain, and calibrate the automatic feed equipment in accordance with manufacturer's specifications to regulate the volume of each of the cleaning solvent and water (or other non-VOM), as mixed; and
 - B. Pre-set the automatic feed equipment so that the consumption rates of the cleaning solvent and water (or other non-VOM), as applied, comply with Section 218.407(a)(4)(A).
- ii. For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records as indicated in Condition 1.1.9.

1.1.9 Recordkeeping Requirements

a. Cleaning Solution Recordkeeping Requirements

- i. For each batch of cleaning solution used with the affected press for which the Permittee relies on the vapor pressure of the cleaning solution to demonstrate compliance, the Permittee shall collect and record the following information [35 IAC 218.411(d)(2)(C)]:
 - A. The name and identification of each cleaning solution;
 - B. Date and time of preparation, and each subsequent modification, of the batch;
 - C. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent;
 - D. The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and
 - E. The VOM composite partial vapor pressure of each as-used cleaning solution in mmHg at 20EC (68EF).
- ii. For each cleaning solution used with the

affected press for which the Permittee relies on the VOM content to demonstrate compliance with 35 IAC 218.407(a)(4)(A) and which is prepared at the source with automatic equipment, the Permittee shall collect and record the following [35 IAC 218.411(d)(2)(A)]:

- A. The name and identification of each cleaning solution;
- B. The VOM content of each cleaning solvent in the cleaning solution;
- C. Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);
- D. The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;
- E. The VOM content of the as-used cleaning solution (percent by weight), with supporting calculations; and
- F. A calibration log for the automatic equipment, detailing periodic checks.

iii. For each batch of cleaning solution used with the affected press for which the Permittee relies on the VOM content to demonstrate compliance with 35 IAC 218.407(a)(4)(A) and which is not prepared at the source with automatic equipment, the Permittee shall collect and record the following [35 IAC 218.411(d)(2)(B)]:

- A. The name and identification of each cleaning solution;
- B. Date and time of preparation, and each subsequent modification of the batch;
- C. The VOM content of each cleaning solvent in the cleaning solution;

- D. The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and
 - E. The VOM content of the as-used cleaning solution (percent by weight), with supporting calculations.
- b. The Permittee shall collect and record the following information for the affected press to demonstrate compliance with the conditions of this permit:
- i. The VOM content of each ink, fountain solution additive, cleaning solution, as used fountain solution, and any other VOM containing materials (such as coatings) used with basis, e.g., supplier data sheet or laboratory analysis report.
 - ii. The monthly usage of ink, fountain solution additive, cleaning solution and any other VOM containing materials (such as coatings) used, on each line in pounds.
 - iii. If VOM containing material is reclaimed for reuse or off-site disposal, so that its VOM is not emitted at the source and the Permittee wants to take credit for this "reclaimed solvent" for each batch, the Permittee shall keep records and documentation for the amount of reclaimed solvent and analysis of VOM content.
 - iv. VOM emissions calculated in accordance Condition 1.1.12.

1.1.10 Reporting Requirements

- a. The Permittee shall notify the Illinois EPA Compliance Section of noncompliance of an affected press with the permit requirements within 30 days of the violation. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.
- b. The Permittee shall notify the Illinois EPA Compliance Section within 30 days of conducting coating operation on the affected press, as addressed by Condition 1.1.3(d). This notification shall include the

information specified by 35 IAC 218.211(c)(1) or 218.404(c)(1), as applicable for the coating operations.

1.1.11 Operational Flexibility

N/A

1.1.12 Compliance Procedures

Compliance with emission limitation in Condition 1.1.6 shall be determined using the emission factors and formulas listed below for affected press:

a. The Permittee may presume 95% retention of ink VOM in the printed substrate for non-heat offset lithographic presses, as stated in 35 IAC 218.411(a)(1)(B)(iii).

b. Emissions and calculations for non-heatset offset lithographic presses shall be based on the following:

i. Ink VOM Emissions = Ink Usage x VOM Content x (0.05)

ii.
$$\frac{\text{Fountain Solution VOM Emissions}}{\text{Fountain Solution Additive Usage}} = \text{VOM Content}$$

iii.A.
$$\frac{\text{Cleaning Solution VOM Emissions}}{\text{Cleaning Solution Usage}} = \text{VOM Content}$$

B. For manual cleaning solution with a VOM composite partial vapor pressure less than 10 mmHg at 20EC the following equation may be used in place of the above equation method provided proper handling is performed as stated in Condition 1.1.3(c)(iii). This is stated in USEPA's Alternative Control Techniques Document Offset Lithographic Printing (EPA 453/R-94-054, June 1994):

$$\frac{\text{Cleaning Solution VOM Emissions}}{\text{Cleaning Solution Usage}} = \text{VOM Content} \times 0.5$$

iv. Reclaimed Solvent Credit = Reclaimed Solvent (tons) x VOM Content (wt. %)

Note: Credit for reclaimed cleaning solution is not allowed to be taken if the equation in 1.1.12(b)(iv) is used, because this equation takes into account this credit.

$$v. \quad \begin{array}{l} \textit{Other VOM} \\ \textit{Emissions} \end{array} = \begin{array}{l} \textit{Other Material} \\ \textit{Usage} \end{array} \times \begin{array}{l} \textit{VOM} \\ \textit{ALIGNLContent} \end{array}$$

$$vi. \quad \begin{array}{l} \text{Total VOM Emissions} \\ + \text{Fountain Solution VOM Emissions} \\ + \text{Cleaning Solution VOM Emissions} \\ + \text{Other VOM Emissions} \\ - \text{Reclaimed Solvent Emissions} \end{array} = \text{Ink VOM Emissions}$$

Please note that the terms and conditions contained in this construction permit will only apply in the event the installation of the new press 5A is completed. If the new press 5A is not installed, the terms and conditions of this construction permit will not apply and the terms and conditions of the existing Title V will continue to apply.

Please note that if installation of the Press 5A is performed, operation under this Construction Permit is allowed until the next reopening of the CAAPP.

RNG

Attachment 1

NSR Applicability

Contemporaneous Time Period of 1998 Through 2002

Table I B Emissions Increases Associated With The Proposed Modification

<u>VOM</u> <u>Item of Equipment</u>	<u>Proposed Project</u>	<u>Permitted</u> <u>Emissions</u> <u>(Tons/Year)</u>
Press 5A and #2 Combined	2001	39.5*

Table II B Source-Wide Creditable Contemporaneous Emission Increases

<u>VOM</u> <u>Item of Equipment</u>	<u>Date</u>	<u>Permit</u>	<u>Permitted</u> <u>Emissions</u> <u>(Tons/Year)</u>
Press #2	1999	99030028	24.9*

Table III B Source-Wide Creditable Contemporaneous Emission Decreases

<u>VOM</u> <u>Item of Equipment</u>	<u>Removal Date</u>	<u>VOM*</u> <u>Emissions</u> <u>(Tons/Year)</u>
Press #1	1999	-12.51
Press #5	1999	<u>-2.55</u>
		-15.06

Table IV B Net Emissions Change

	<u>(Tons/Year)</u>
Increases Associated With The Proposed Modification	39.50
Creditable Contemporaneous Emission Increases	0.00
Creditable Contemporaneous Emission Decreases	<u>-15.06</u>
	24.44

* Limitation for Presses #5A and existing #2 combined shall not exceed 39.50 tons/year. Existing press(#2) shall not exceed 24.9 tons/year pursuant to Construction Permit 99030028.