

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Berlin Industries
Attn: Ed Majerczak
175 Mercedes Drive
Carol Stream, Illinois 60188-9401

Application No.: 99070033

I.D. No.: 043020ABK

Applicant's Designation:

Date Received: July 15, 1999

Subject: Presses #356-358

Date Issued: November 29, 1999

Location: 175 Mercedes Drive, Carol Stream

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of new heatset web offset lithographic printing lines (#356, #357) and a modification to existing heatset web offset lithographic printing line (#358) each controlled by existing regenerative incinerator (RI-1) as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1.1.1 Description

Heatset web offset lithographic printing involves the use of dryers to dry up the ink applied through the printing units. The ink oil emission is then controlled by an incinerator before being discharged to the atmosphere through the stack.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Press 356	Zircon Heatset Web Offset Lithographic Printing Press with Dryer	Regenerative Incinerator (RI-1)
Press 357	Heidelberg Model M3000 Heatset Web Offset Lithographic Printing Press with Dryer	Regenerative Incinerator (RI-1)
Press 358	Heidelberg Heatset Web Offset Lithographic Printing Press with Dryer	Regenerative Incinerator (RI-1)

1.1.3 Applicability Provisions and Applicable Regulations

- a. An ~~A~~affected printing line@ for the purpose of these unit-specific conditions, is each heatset web offset lithographic printing line as described in Conditions 1.1.1 and 1.1.2.

- b. The affected printing lines are 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 [35 IAC 212.321(a)].
- c. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm [35 IAC 214.301].
- d. The affected printing lines are subject to 35 IAC 218 Subpart G, Use of Organic Material, which provides that:
 - i. No person shall 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 Condition 1.1.3(d)(ii) (see also 35 IAC 218.302) and the following exception: If no odor nuisance exists the limitation of this Condition shall apply only to photochemically reactive material [35 IAC 218.301].
 - ii. Emissions of organic material in excess of those permitted by Condition 1.1.3(d)(i) (see also 35 IAC 218.301) are allowable if such emissions are controlled by flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water [35 IAC 218.302(a)].
- e. Pursuant to 35 IAC 218.407(a), no owner or operator of lithographic printing line(s) shall:
 - i. Cause or allow the operation of any heatset web offset lithographic printing line unless:
 - A. The total VOM content in the as-applied fountain solution meets one of the following conditions:
 - 1. 1.6 percent or less, by volume [35 IAC 218.407(a)(1)(A)(i)];
 - 2. 3 percent or less, by volume, and the temperature of the fountain solution is maintained below 15.6°C (60°F), measured at the reservoir or the fountain tray [35 IAC 218.407(a)(1)(A)(ii)]; or

3. 5 percent or less, by volume, and the as-applied fountain solution contains no alcohol [35 IAC 218.407(a)(1)(A)(iii)];
 - B. The air pressure in the dryer is maintained lower than the air pressure of the press room, such that air flow through all openings in the dryer, other than the exhaust, is into the dryer at all times when the printing line is operating [35 IAC 218.407(a)(1)(B)];
 - C. An afterburner is installed and operated so that VOM emissions (excluding methane and ethane) from the press dryer exhaust(s) are reduced by 90 percent, by weight, or to a maximum afterburner exhaust outlet concentration of 20 ppmv (as carbon) [35 IAC 218.407(a)(1)(C)];
 - D. The afterburner is equipped with the applicable monitoring equipment specified in Condition 1.1.8(e) (see also 35 IAC 218.105(d)(2)) and the monitoring equipment is installed, calibrated, operated, and maintained according to manufacturer's specifications at all times when the afterburner is in use [35 IAC 218.407(a)(1)(D)]; and
 - E. The afterburner is operated at all times when the printing line is in operation [35 IAC 218.407(a)(1)(E)].
- ii. Cause or allow the use of a cleaning solution on any lithographic printing line unless:
 - A. The VOM content of the as-used cleaning solution is less than or equal to 30 percent, by weight [35 IAC 218.407(a)(4)(A)]; or
 - B. The VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20EC (68EF) [35 IAC 218.407(a)(4)(B)].
 - iii. Cause or allow VOM containing cleaning materials, including used cleaning towels, associated with any lithographic printing line to be kept, stored or disposed of in any manner other than in closed containers [35 IAC 218.407(a)(5)].

1.1.4 Non-Applicability of Regulations of Concern

- a. The affected printing lines are not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Printing and Publishing Industry, 40 CFR 9 and 63, Subparts A and

KK, because the affected printing lines are not publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses and the source is not a major source of HAPs.

- b. The drying ovens and the afterburners associated with the affected printing lines are not subject to 35 IAC 216.121, Emissions of Carbon Monoxide from Fuel Combustion Emission Units, because the actual heat input of each unit is less than 2.9 MW (10 mmBtu/hr) and the drying ovens and the afterburners are not by definition fuel combustion emission units.
- c. The drying ovens and the afterburners associated with the affected printing lines are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each unit is less than 73.2 MW (250 mmBtu/hr) and the drying ovens and the afterburners are not by definition fuel combustion emission units.
- d. The affected printing lines are not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM₁₀, as identified in 35 IAC 212.324(a)(1).
- e. 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 Subpart H: Printing and Publishing [35 IAC 218.204(c)].

1.1.5 Control Requirements

- a. The regenerative incinerator combustion chamber shall be preheated to the manufacturer's recommended temperature but no less than the temperature at which compliance was demonstrated in the most recent compliance test, before the printing process is begun, and this temperature shall be maintained during operation of the affected printing line.
- b. The Permittee shall follow good operating practices for the afterburners, including periodic inspection, routine maintenance and prompt repair of defects.
- c. Each affected printing line shall only be operated with natural gas as the fuel in the press dryer and the regenerative incinerator.

1.1.6 Emission Limitations

The affected printing lines are subject to the following:

- a. Emissions from the affected printing lines shall not exceed 2.9 tons per month and 22.7 tons per year. These limits are based on the maximum material usage and emission factors and formulas in Condition 1.1.12(c).
- b. Emissions from the press dryers shall not exceed the following limits:

PM		SO ₂		VOM		CO		NO _x	
(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)
0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.9	0.2	1.4

These limits are based on maximum fuel usage and emission factors and formulas in Condition 1.1.12(d).

- 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).
- d. The source has addressed the applicability and compliance of 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD) (See Attachment 1). These limits continue to ensure that the construction and/or modification addressed in this construction permit does not constitute a new major source or major modification pursuant to these rules.

1.1.7 Testing Requirements

- a. Testing to demonstrate compliance with the requirements of Condition 1.1.3(e) (see also 35 IAC 218.407) shall be conducted by the owner or operator within 90 days after a request by the Illinois EPA. Such testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Illinois EPA in writing 30 days in advance of conducting such testing to allow the Illinois EPA to be present during such testing [35 IAC 218.409(a)].
- b. Pursuant to 35 IAC 218.409(b), the methods and procedures of 35 IAC 218.105(d) and (f) shall be used for testing to demonstrate compliance with the requirements of Condition 1.1.3(e)(i)(C) (see also 218.407(a)(1)(C)), as follows:
 - i. To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, Appendix A. The sampling sites for determining efficiency in reducing VOM from the dryer exhaust shall be located between the dryer exhaust and the control device inlet, and between the outlet of the control device and the exhaust to the atmosphere [35 IAC 218.409(b)(1)];

- ii. To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, Appendix A [35 IAC 218.409(b)(2)];
- iii. To determine, pursuant to 35 IAC 218.409(b)(3), the VOM concentration of the exhaust stream entering and exiting the control device, Method 25 or 25A, as appropriate, 40 CFR 60, Appendix A. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:
 - A. The allowable outlet concentration of VOM from the control device is less than 50 ppmv, as carbon [35 IAC 218.409(b)(3)(A)];
 - B. The VOM concentration at the inlet of the control device and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon [35 IAC 218.409(b)(3)(B)]; and
 - C. Due to the high efficiency of the control device, the anticipated VOM concentration at the control device exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25 [35 IAC 218.409(b)(3)(C)];
- iv. Notwithstanding the criteria or requirements in Method 25 which specifies a minimum probe temperature of 129°C (265°F), the probe must be heated to at least the gas stream temperature of the dryer exhaust, typically close to 176.7°C (350°F) [35 IAC 218.409(b)(4)];
- v. During testing, the printing line(s) shall be operated at representative operating conditions and flow rates [35 IAC 218.409(b)(5)]; and

- vi. During testing, an air flow direction indicating device, such as a smoke stick, shall be used to demonstrate 100 percent emissions capture efficiency for the dryer in accordance with Condition 1.1.3(e)(i)(B) (see also 35 IAC 218.407(a)(1)(B)) [35 IAC 218.409(b)(6)].
- c. Pursuant to 35 IAC 218.409(c), testing to demonstrate compliance with the VOM content limitations in Conditions 1.1.3(e)(i)(A) and (e)(ii)(A) (see also 35 IAC 218.407(a)(1)(A) and (a)(4)(A)), and to determine the VOM content of fountain solutions, fountain solution additives, cleaning solvents, cleaning solutions, and inks (pursuant to the requirements of 35 IAC 218.411(a)(1)(B)), shall be conducted upon request of the Illinois EPA, as follows:
 - i. The applicable test methods and procedures specified in 35 IAC 218.105(a) shall be used; provided, however, Method 24 shall be used to demonstrate compliance [35 IAC 218.409(c)(1)]; or
 - ii. The manufacturer's specifications for VOM content for fountain solution additives, cleaning solvents, and inks may be used if such manufacturer's specifications are based on 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 [35 IAC 218.409(c)(2)].
- d. Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in 35 IAC 218.110 [35 IAC 218.409(e)].
- e. Testing for VOM content of inks and other printing materials shall be performed as follows [35 IAC 218.105(a) and Section 39.5(7)(b) of the Act]:
 - i. On at least an annual basis:
 - A. The VOM content of representative inks and coatings "as applied" on the affected printing line shall be determined according to USEPA Reference Methods 24 and 24A of 40 CFR 60 Appendix A and the procedures of 35 IAC 218.105(a).
 - B. This testing may be performed by the supplier of a material provided that the supplier provides appropriate documentation for such testing to the Permittee and the Permittee's records pursuant to Condition 1.1.9(g) directly reflect the application of

such material and separately account for any additions of solvent.

C. Upon written request from the Permittee, the Illinois EPA may waive this requirement on a year-by-year basis, if prior testing shows a margin of compliance and no significant changes in coating supplies have occurred.

ii. Upon reasonable request by the Illinois EPA, the VOM content of specific inks, coatings, and cleaning solvents used on affected printing lines shall be determined according to USEPA Reference Methods 24 and 24A of 40 CFR 60 Appendix A and the procedures of 35 IAC 218.105(a) [35 IAC 218.105(a) and Section 39.5(7)(b) of the Act].

1.1.8 Monitoring Requirements

a. Fountain Solution Temperature.

i. The owner or operator of any lithographic printing line(s) relying on the temperature of the fountain solution to demonstrate compliance shall install, maintain, and continuously operate a temperature monitor of the fountain solution in the reservoir or fountain tray, as applicable [35 IAC 218.410(a)(1)].

ii. The temperature monitor must be capable of reading with an accuracy of 0.3°C or 0.5°F, and must be attached to an automatic, continuous recording device such as a 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 owner or operator 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 VOM Content. Pursuant to 35 IAC 218.410(b), the owner or operator of any lithographic printing line(s) subject to Condition 1.1.3(e)(i)(A) (see also 35 IAC 218.407(a)(1)(A)) shall:

i. For a fountain solution to which VOM is not added automatically:

A. Maintain records of the VOM content of the fountain solution in accordance with Condition 1.1.9(d)(iii)

(see also 35 IAC 218.411(c)(2)(C)) [35 IAC 218.410(b)(1)(A)]; or

B. Pursuant to 35 IAC 218.410(b)(1)(B), 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 shall determine compliance with the VOM content limitation of the as-applied fountain solution by using one of the following options:

1. 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 [35 IAC 218.410(b)(1)(B)(i)]; or

2. 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 [35 IAC 218.410(b)(1)(B)(ii)];

ii. 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 of 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 [35 IAC 218.410(b)(2)].

- c. Afterburners For Heatset Web Offset Lithographic Printing Line(s). Pursuant to 35 IAC 218.410(c), if an afterburner is used to demonstrate compliance, the owner or operator of a heatset web offset lithographic printing line subject to Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) shall:
 - i. Install, calibrate, maintain, and operate temperature monitoring device(s) with an accuracy of 3EC or 5EF on the afterburner in accordance with Condition 1.1.8(e) (see also 35 IAC 218.105(d)(2)) and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the afterburner is operating [35 IAC 218.410(c)(1)]; and
 - ii. Install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring device(s), such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor [35 IAC 218.410(c)(2)].
- d. Cleaning Solution.
 - i. Pursuant to 35 IAC 218.410(e)(1), the owner or operator of any lithographic printing line relying on the VOM content of the cleaning solution to comply with Condition 1.1.3(e)(ii)(A) (see also 35 IAC 218.407(a)(4)(A)) must:
 - A. Pursuant to 35 IAC 218.410(e)(1)(A), for cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM):
 - 1. 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 [35 IAC 218.410(e)(1)(A)(i)]; and
 - 2. 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 Condition 1.1.3(e)(ii)(A) (see also 35 IAC 218.407(a)(4)(A)) [35 IAC 218.410(e)(1)(A)(ii)];

- B. For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records of the usage of cleaning solvent and water (or other non-VOM) as set forth in Condition 1.1.9(e) (see also 35 IAC 218.411(d)(2)) [35 IAC 218.410(e)(1)(B)].
- ii. The owner or operator of any lithographic printing line relying on the vapor pressure of the cleaning solution to comply with Condition 1.1.3(e)(ii)(B) (see also 35 IAC 218.407(a)(4)(B)) must keep records for such cleaning solutions used on any such line(s) as set forth in Condition 1.1.9(e)(iii) (see also 35 IAC 218.411(d)(2)(C)) [35 IAC 218.410(e)(2)].
- e. An owner or operator that uses an afterburner or carbon adsorber to comply with any Section of 35 IAC Part 218 shall use Illinois EPA and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the afterburner is in use. The continuous monitoring equipment must monitor for each afterburner which has a catalyst bed, commonly known as a catalytic afterburner, the temperature rise across each catalytic afterburner bed or VOM concentration of exhaust [35 IAC 218.105(d)(2)(A)(ii)].

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for each affected printing line to demonstrate compliance with Conditions 1.1.3, 1.1.5, and 1.1.6:

- a. Records of the testing of VOM content of coatings, inks, fountain solution, and cleaning solvents pursuant to Condition 1.1.7(c) through (e), which include the following [Section 39.5(7)(e) of the Act]:
 - i. Identification of material tested.
 - ii. Results of analysis.
 - iii. Documentation of analysis methodology.
 - iv. Person performing analysis.
- b. Records of the testing of the efficiency of each capture system and control device pursuant to Conditions 1.1.7(a) and (b), which include the following:
 - i. The date, place and time of sampling or measurements;
 - ii. The date(s) analyses were performed;

- iii. The company or entity that performed the analyses;
 - iv. The analytical techniques or methods used;
 - v. The results of such analyses; and
 - vi. The operating conditions as existing at the time of sampling or measurement.
- c. Pursuant to 35 IAC 218.411(b)(3), an owner or operator of a heatset web offset lithographic printing line(s) subject to the control requirements of Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) shall collect and record daily the following information for each heatset web offset lithographic printing line subject to the requirements of Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)):
- i. Afterburner or other approved control device monitoring data in accordance with Condition 1.1.8(c) (see also 35 IAC 218.410(c)) [35 IAC 218.411(b)(3)(A)];
 - ii. A log of operating time for the afterburner or other approved control device, monitoring equipment, and the associated printing line [35 IAC 218.411(b)(3)(B)];
 - iii. A maintenance log for the afterburner or other approved control device and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages [35 IAC 218.411(b)(3)(C)]; and
 - iv. A log detailing checks on the air flow direction or air pressure of the dryer and press room to insure compliance with the requirements of Condition 1.1.3(e)(i)(B) (see also 35 IAC 218.407(a)(1)(B)) at least once per 24-hour period while the line is operating [35 IAC 218.411(b)(3)(D)].
- d. Pursuant to 35 IAC 218.411(c)(2), an owner or operator of a lithographic printing line subject to Condition 1.1.3(e)(i)(A) (see also 35 IAC 218.407(a)(1)(A)), shall collect and record the following information for each fountain solution:
- i. The name and identification of each batch of fountain solution prepared for use on one or more lithographic printing lines, the lithographic printing line(s) or centralized reservoir using such batch of fountain solution, and the applicable VOM content limitation for the batch [35 IAC 218.411(c)(2)(A)];

- ii. Pursuant to 35 IAC 218.411(c)(2)(B), if an owner or operator uses a hydrometer, refractometer, or conductivity meter, pursuant to Condition 1.1.8(b)(i)(B) (see also 35 IAC 218.410(b)(1)(B)), to demonstrate compliance with the applicable VOM content limit in Condition 1.1.3(e)(i)(A) (see also 35 IAC 218.407(a)(1)(A)):
 - A. The date and time of preparation, and each subsequent modification, of the batch [35 IAC 218.411(c)(2)(B)(i)];
 - B. The results of each measurement taken in accordance with Condition 1.1.8(b) (see also 35 IAC 218.410(b)) [35 IAC 218.411(c)(2)(B)(ii)];
 - C. Documentation of the periodic calibration of the meter in accordance with the manufacturer's specifications, including date and time of calibration, personnel conducting, identity of standard solution, and resultant reading [35 IAC 218.411(c)(2)(B)(iii)]; and
 - D. Documentation of the periodic temperature adjustment of the meter, including date and time of adjustment, personnel conducting and results [35 IAC 218.411(c)(2)(B)(iv)].
- iii. Pursuant to 35 IAC 218.411(c)(2)(C), if the VOM content of the fountain solution is determined pursuant to Condition 1.1.8(b)(i)(A) (see also 35 IAC 218.410(b)(1)(A)), for each batch of as-applied fountain solution:
 - A. Date and time of preparation and each subsequent modification of the batch [35 IAC 218.411(c)(2)(C)(i)];
 - B. Volume and VOM content of each component used in, or subsequently added to, the fountain solution batch [35 IAC 218.411(c)(2)(C)(ii)];
 - C. Calculated VOM content of the as-applied fountain solution [35 IAC 218.411(c)(2)(C)(iii)]; and
 - D. Any other information necessary to demonstrate compliance with the applicable VOM content limits in Condition 1.1.3(e)(i)(A) (see also 35 IAC 218.407(a)(1)(A)), as specified in the source's operating permit [35 IAC 218.411(c)(2)(C)(iv)].
- iv. Pursuant to 35 IAC 218.411(c)(2)(D), if the owner or operator relies on the temperature of the fountain

solution to comply with the requirements in Condition 1.1.3(e)(i)(A)(2) (see also 35 IAC 218.407(a)(1)(A)(ii)):

- A. The temperature of the fountain solution at each printing line, as monitored in accordance with Condition 1.1.8(a) (see also 35 IAC 218.410(a)) [35 IAC 218.411(c)(2)(D)(i)]; and
 - B. A maintenance log for the temperature monitoring devices and automatic, continuous temperature recorders detailing all routine and non-routine maintenance performed, including dates and duration of any outages [35 IAC 218.411(c)(2)(D)(ii)].
- e. Pursuant to 35 IAC 218.411(d)(2), for lithographic printing line cleaning operations, an owner or operator of a lithographic printing line subject to the requirements of Condition 1.1.3(e) (see also 35 IAC 218.407) shall collect and record the following information for each cleaning solution used on each lithographic printing line:
- i. Pursuant to 35 IAC 218.411(d)(2)(A), for each cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Condition 1.1.3(e)(ii)(A) (see also 35 IAC 218.407(a)(4)(A)) and which is prepared at the source with automatic equipment:
 - A. The name and identification of each cleaning solution [35 IAC 218.411(d)(2)(A)(i)];
 - B. The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Condition 1.1.7(c) (see also 35 IAC 218.409(c)) [35 IAC 218.411(d)(2)(A)(ii)];
 - 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) [35 IAC 218.411(d)(2)(A)(iii)];
 - D. The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution [35 IAC 218.411(d)(2)(A)(iv)];
 - E. The VOM content of the as-used cleaning solution, with supporting calculations [35 IAC 218.411(d)(2)(A)(v)]; and

- F. A calibration log for the automatic equipment, detailing periodic checks [35 IAC 218.411(d)(2)(A)(vi)].

- ii. Pursuant to 35 IAC 218.411(d)(2)(B), for each batch of cleaning solution for which the owner or operator relies on the VOM content to demonstrate compliance with Condition 1.1.3(e)(ii)(A) (see also 35 IAC 218.407(a)(4)(A)), and which is not prepared at the source with automatic equipment:
 - A. The name and identification of each cleaning solution [35 IAC 218.411(d)(2)(B)(i)];
 - B. Date and time of preparation, and each subsequent modification, of the batch [35 IAC 218.411(d)(2)(B)(ii)];
 - C. The VOM content of each cleaning solvent in the cleaning solution, as determined in accordance with Condition 1.1.7(c) (see also 35 IAC 218.409(c)) [35 IAC 218.411(d)(2)(B)(iii)];
 - D. The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution [35 IAC 218.411(d)(2)(B)(iv)]; and
 - E. The VOM content of the as-used cleaning solution, with supporting calculations [35 IAC 218.411(d)(2)(B)(v)].

- iii. Pursuant to 35 IAC 218.411(d)(2)(C), for each batch of cleaning solution for which the owner or operator relies on the vapor pressure of the cleaning solution to demonstrate compliance with Condition 1.1.3(e)(ii)(B) (see also 35 IAC 218.407(a)(4)(B)):
 - A. The name and identification of each cleaning solution [35 IAC 218.411(d)(2)(C)(i)];
 - B. Date and time of preparation, and each subsequent modification, of the batch [35 IAC 218.411(d)(2)(C)(ii)];
 - C. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with Condition 1.1.7(d) (see also 35 IAC 218.409(e)) [35 IAC 218.411(d)(2)(C)(iii)];

- D. The total amount of each cleaning solvent used to prepare the as-used cleaning solution [35 IAC 218.411(d)(2)(C)(iv)]; and
 - E. The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with Condition 1.1.7(d) (see also 35 IAC 218.409(e)) [35 IAC 218.411(d)(2)(C)(v)].
- iv. The date, time and duration of scheduled inspections performed to confirm the proper use of closed containers to control VOM emissions, and any instances of improper use of closed containers, with descriptions of actual practice and corrective action taken, if any [35 IAC 218.411(d)(2)(D)].
- f. Records of the VOM usage for the ink, fountain solution and cleaning solvent for the affected printing lines (tons/month and tons/year);
 - g. The aggregate monthly and annual VOM emissions from the affected printing lines based on the ink and solvent usage, with supporting calculations; and
 - h. Records of the monthly and annual aggregate CO, NO_x, PM, SO₂, and VOM emissions from the press dryers and the afterburners associated with the affected printing lines shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

1.1.10 Reporting Requirements

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

- a. Pursuant to 35 IAC 218.411(b), an owner or operator of a heatset web offset lithographic printing line(s) subject to the control requirements of Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) shall comply with the following:
 - i. Pursuant to 35 IAC 218.411(b)(2), if testing of the afterburner or other approved control device is conducted pursuant to Condition 1.1.7(b) (see also 35 IAC 218.409(b)), the owner or operator shall, within 90 days after conducting such testing, submit a copy of all test results to the Illinois EPA and shall submit a certification to the Illinois EPA that includes the following:

- A. A declaration that all tests and calculations necessary to demonstrate whether the lithographic printing line(s) is in compliance with Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) have been properly performed 35 IAC 218.411(b)(2)(A)];
 - B. A statement whether the lithographic printing line(s) is or is not in compliance with Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) and a statement whether the lithographic printing line(s) is or is not in compliance with Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) [35 IAC 218.411(b)(2)(B)]; and
 - C. The operating parameters of the afterburner or other approved control device during testing, as monitored in accordance with Condition 1.1.8(c) (see also 35 IAC 218.410(c)) as applicable [35 IAC 218.411(b)(2)(C)].
- ii. On and after March 15, 1996, notify the Illinois EPA in writing of any violation of Condition 1.1.3(e)(i)(C) (see also 35 IAC 218.407(a)(1)(C)) within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation [35 IAC 218.411(b)(4)].
- b. An owner or operator of a lithographic printing line subject to Condition 1.1.3(e)(i)(A) (see also 35 IAC 218.407(a)(1)(A)), shall notify the Illinois EPA in writing of any violation of Condition 1.1.3(e) (see also 35 IAC 218.407) within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation [35 IAC 218.411(c)(3)].
 - c. For lithographic printing line cleaning operations, an owner or operator of a lithographic printing line subject to the requirements of Condition 1.1.3(e) (see also 35 IAC 218.407) shall notify the Illinois EPA in writing of any violation of Condition 1.1.3(e) (see also 35 IAC 218.407) within 30 days after the occurrence of such violation. Such notification shall include a copy of all records of such violation [35 IAC 218.411(d)(3)].
 - d. Emissions of NO_x, CO, PM, VOM and SO₂ in excess of the limits in Conditions 1.1.6(a) and (b) based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.1.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 1.1.9 and the emission factors and formulas listed below:

- a. Compliance with Condition 1.1.3(c) and (d) is assumed to be achieved by the work-practices inherent in operation of a natural gas-fired press dryer.
- b. Compliance with Conditions 1.1.3(e) and (f) is addressed by proper operation of the afterburner, as addressed by Conditions 1.1.5(a), (b) and 1.1.8(c).
- c. To determine compliance with Condition 1.1.6(a), emissions from the affected printing lines shall be calculated based on the following:

Volatile Organic Material Emissions:

$$\text{VOM (lb)} = [(\text{Coating or Ink Usage, gal}) \times (\text{Coating or Ink Density, lb/gal}) \times (\text{VOM Content of Coating or Ink, wt. \%}) \times (\text{Adjustment Factor for VOM Retention in Substrate})] + [(\text{Fountain Solution Usage, gal}) \times (\text{Fountain Solution Density, lb/gal}) \times (\text{lb captured/lb used})] + [(\text{Wash Solvent Usage, gal}) \times (\text{Wash Solvent Density, lb/gal}) \times (\text{lb captured/lb used})] \times [1 - (\text{Overall Afterburner Efficiency}^* (\%)/100)] + [(\text{Fountain Solution Usage, gal}) \times (\text{Fountain Solution Density, lb/gal}) \times (1 - \text{lb captured/lb used})] + [(\text{Wash Solvent Usage, ton}) \times (1 - \text{lb captured/lb used})]$$

*As specified by manufacturer or vendor of the afterburners or by testing pursuant to Conditions 1.1.7(a) and (b).

- d. To determine compliance with Condition 1.1.6(b), emissions from the press dryers on the affected printing lines shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lb/Mft³)</u>
CO	84
NO _x	100
PM	7.6
SO ₂	0.6
VOM	5.5

These are the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, March, 1998.

Press Dryer Emissions (lb) = (Natural Gas Consumed, Mft³) x (The
Appropriate Emission Factor, lb/Mft³)

Operation of the equipment being constructed an/or modified is allowed under this permit until final action is taken on the Clean Air Act Permit Program (CAAPP) application for this source, provided that such CAAPP application has been received and been deemed complete by the Illinois EPA. As a result, the Permittee must still update the CAAPP application to include the aforementioned equipment but is not required to submit an application for a state operating permit in the interim.

Please note that this permit is issued for the construction (and operation) of the equipment listed above. The Permittee should update their CAAPP application to include this new equipment by submitting form 505-CAAPP - "Supplement to CAAPP Application" along with all other appropriate information to accomplish this.

If you have any questions on this permit, please contact Jason Schnepf at 217/782-2113.

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

DES:JMS:psj

cc: Region 1