217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

R. R. Donnelley & Sons Company
Attn: Vicki Howell
U.S. Route 45 North
Mattoon, Illinois 61938-1668

Application No.: 01070002 I.D. No.: 029803AAA
Applicant's Designation: Date Received: July 2, 2001
Subject: Presses, Boiler and Control System Expansion
Date Issued: October 3, 2001
Location: U.S. Route 45 North, Mattoon

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air Pollution control equipment consisting of a new heatset web offset lithographic press (MM-718) and control of existing heatset web offset presses (MM-710 and MM-714), all controlled by an expanded regenerative thermal oxidizer system, a new rotogravure press (MR-736), controlled by an expanded solvent recovery system and a new Steam Boiler #7 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: Heatset Web Offset Lithographic Presses
Control: Regenerative Thermal Oxidizer

1.1.1 Description

The new and existing heatset web offset presses are used to produce magazines, catalogs and other similar printed materials. The presses are controlled by a regenerative thermal oxidizer system. As part of this project, this system will be expanded with the addition of a new regenerative thermal oxidizer, which will replace an existing recuperative oxidizer to function in tandem with an existing regenerative unit. Following this change, the system will operate at a higher destruction efficiency of at least 97%.

1.1.2 List of Emission Units and Pollution Control Equipment

Units	Description	Emission Control Equipment
MM-718	Heatset Web Offset Lithographic Press	Regenerative Thermal Oxidizer System
MM-715	Heatset Web Offset Lithographic Press	
MM-716	Heatset Web Offset Lithographic Press	
MM-717	Heatset Web Offset Lithographic Press	
MM-719	Heatset Web Offset Lithographic Press	
MM-721	Heatset Web Offset Lithographic Press	
MM-723	Heatset Web Offset Lithographic Press	
MM-710	Heatset Web Offset Lithographic Press*	
MM-714	Heatset Web Offset Lithographic Press*	

* Existing presses being connected to the control system as part of this project.

1.1.3 Applicability Provisions and Applicable Regulations

a. The “affected presses”, for the purpose of these unit-specific conditions, are the presses as described in Condition 1.1.1 and 1.1.2, including the new heatset web offset lithographic press (MM-718).

b. The affected presses are subject to 35 IAC 214.301, which provide that no person shall cause or allow emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm.

c. The Permittee may not cause or allow the operation of the affected presses unless the fountain solution contains no more than eight 8.0 percent, by weight, of volatile organic material [35 IAC 215.408(b)].

d. The affected presses are subject to 35 IAC 212.321, which provides 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, that exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

1.1.4 Non-Applicability of Regulations of Concern

a. The drying ovens and the oxidizers associated with the affected presses are not subject to 35 IAC 216.121, Emissions of Carbon Monoxide from Fuel Combustion Emission Units, because the drying ovens and the oxidizers are not by definition fuel combustion emission units.

b. The affected presses are not subject to 35 IAC 215.204(c), Coating Operations/Paper Coating, as the paper coating limitation does not apply to equipment used for both printing and paper coating [35 IAC 215.204(c)].

c. The affected presses are not subject to 35 IAC 215, Subpart K specifically 35 IAC 215.301), because the affected presses comply with 35 IAC 215, Subpart P [35 IAC 215.403].

d. The affected presses 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 presses are not publication rotogravure, product and packaging gravure, or wide-web flexographic printing presses.

1.1.5 Control Requirements

a. The oxidizers' combustion chambers 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 presses.

b. The Permittee shall follow good operating practices for the oxidizers, including periodic inspection, routine maintenance and prompt repair of defects.

c. Each affected press shall only be operated with natural gas or propane as the fuel in the press dryer system and the oxidizers.

d. The Permittee shall use measures to minimize uncontrolled emissions including but not limited to use of off-shift labor.

1.1.6 Emission Limitations

a. i. Total volatile organic material (VOM) emissions from the affected presses shall not exceed the following limits. Compliance with these limits shall be determined based on the emission factors and formulas in Condition 1.1.12(b). These limits become effective upon initial startup of MR-736.

	EMISSIONS	
Presses	(Tons/Mo)	(Tons/Yr)
MM-718	4.69	37.5
MM-710*	1.8	14.4
MM-714*	2.5	20.1

* Existing presses, which are to be controlled in order to address the applicability and compliance of 40 CFR 52.21, Prevention of Significant Deterioration (PSD). 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. (See Attachment A).

ii. 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).

b. This permit is based on no increase in emission from the existing presses MM-715, MM-716, MM-717, MM-719, MM-721 and MM-723, which will be controlled the more efficient expanded thermal oxidizer system.

1.1.7 Testing Requirements

a. Upon request by the Illinois EPA, the volatile organic material content of fountain solution, inks and all coatings shall be determined by Method 24, 40 CFR 60, Appendix A, incorporated by reference in 35 IAC 215.105. [35 IAC 215.409].

i. Within 180 days of initial startup, the volatile organic material emissions from the expanded regenerative thermal oxidizer shall be measured during conditions that are representative of maximum emissions. The test shall be designed to measure the destruction efficiency across the regenerative thermal oxidizer.

ii. Upon a reasonable request by the Illinois EPA, the Permittee shall also conduct emissions testing, at his own expense, to demonstrate compliance [35 IAC 215.410(b)].

iii. The following methods and procedures shall be used for testing of emissions, as further specified in 35 IAC 215.105: Refer to 40 CFR 60, Appendix A, for USEPA test methods. [35 IAC 215.410(a)].

Location of Sample Points:	USEPA Method 1
Gas Flow and Velocity:	USEPA Method 2
Flue Gas Weight:	USEPA Method 3
Moisture:	USEPA Method 4
Volatile Organic Material:	USEPA Method 25, 25A if outlet VOM cont. < 50 ppmv as C Non CH_4

iv. At least 60 days prior to the actual date of testing required by Condition 1.1.7, a written test plan shall be submitted to the Compliance Section of the Division of Air Pollution Control for review. This plan shall describe the specific procedures for testing, including as a minimum:

A. The person(s) who will be performing sampling and analysis and their experience with similar tests.

B. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit and any control equipment will be determined.

C. The specific determination of emissions and operation that is intended to be made, including sampling and monitoring locations.

D. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.

E. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.

F. The format and content of the Source Test Report.

v. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 45 days after the test results are compiled and finalized. The Final Report shall include as a minimum:

A. A summary of results

B. General information

C. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule

D. Detailed description of test conditions, including

1. Process information, i.e., mode(s) of operation, process rate, e.g. fuel or raw material consumption

2. Control equipment information, i.e., equipment condition and operating parameters during testing, and

3. A discussion of any preparatory actions taken, i.e., inspections, maintenance and repair

E. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration

vi. The Illinois EPA shall be notified prior to the tests required by Condition 1.1.7 to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing. [35 IAC 215.410(c)].

1.1.8 Monitoring Requirements

The oxidizers shall be equipped with continuous monitoring devices which are installed, calibrated, operated and maintained according to vendor specifications at all times the oxidizers are in use. The monitoring device shall monitor the combustion chamber temperature of each oxidizer.

1.1.9 Recordkeeping Requirements

The Permittee shall maintain monthly records of the following items for each affected press subject to limitation in Condition 1.1.6(a) to demonstrate compliance

with applicable requirements in Conditions 1.1.3, and 1.1.6:

a. Records of weight of ink used (amount supplied to press minus amount discarded or recycled) (pounds);

b. Weight percent VOM in ink (wt. %);

c. Volume of fountain solution additive used (amount supplied to press minus amount discarded or recycled) (gallons);

d. Pounds VOM per gallon of fountain solution additive (pounds/gallon);

e. Volume of manual cleaning solvent used (amount supplied to press minus amount discarded or recycled) (gallons);

f. Pounds VOM per gallon of manual cleaning solvent (pounds/gallon);

g. Volume of automatic cleaning solvent used (amount supplied to press minus amount discarded or recycled) (gallons);

h. Pounds VOM per gallon of automatic cleaning solvent (pounds/gallon); and

i. The aggregate monthly and annual VOM emissions from each affected press (tons/month and tons/year).

1.1.10 Reporting Requirements

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

a. Emissions of VOM in excess of the limits in Condition 1.1.6(a) based on the current month’s records plus the preceding 11 months within 30 days of such an occurrence.

b. Two 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
2009 Mall Street
Collinsville, Illinois 62234

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.1.12 Compliance Procedures

a. Compliance with Condition 1.1.3(b) is assumed to be achieved by the work-practices inherent in operation of the natural gas/propane-fired press dryer systems for the affected presses.

b. To determine compliance with Condition 1.1.6(a), emissions from the affected presses shall be calculated based on the following:

Ink VOM Consumption (C_I):
$C_I = M_I W_I / 100$

Fountain Solution VOM Consumption (C_F):
$C_F = V_F P_F$

Manual Blanket Wash VOM Consumption (C_M):
$C_M = V_M P_M$

Automatic Blanket Wash VOM Consumption (C_A):
$C_A = V_A P_A$

Ink VOM Emissions (E_I):
$E_I = C_I(1-R_I/100)[1-(K/100)(J_I/100)]$

Fountain Solution VOM Emissions (E_F):
$E_F = C_F[1-(K/100)(J_F/100)]$

Automatic Cleaning Solvent VOM Emissions (E_A):
$E_A = C_A[1-(K/100)(J_A/100)]$

Manual Cleaning Solvent VOM Emissions (E_M):
$E_M = C_M(1-R_M/100)$

Total VOM Emissions (E_T):
$E_T = E_I + E_F + E_A + E_M$

Where:

M_I = Weight of ink used (amount supplied to press minus amount discarded or recycled) (pounds)

W_I = Weight percent VOM in ink (wt. %)

V_F = Volume of fountain solution additive used (amount supplied to press minus amount discarded or recycled) (gallons)

P_F = Pounds VOM per gallon of fountain solution additive (pounds/gallon)

V_M = Volume of manual cleaning solvent used (amount supplied to press minus amount discarded or recycled) (gallons)

P_M = Pounds VOM per gallon of manual cleaning solvent (pounds/gallon)

V_A = Volume of automatic cleaning solvent used (amount supplied to press minus amount discarded or recycled) (gallons)

P_A = Pounds VOM per gallon of automatic cleaning solvent (pounds/gallon)

C_I = Ink VOM Consumption (pounds)

C_F = Fountain Solution VOM Consumption (pounds)

C_A = Automatic Cleaning Solvent VOM Consumption (pounds)

C_M = Manual Cleaning Solvent VOM Consumption (pounds)

R_I = Percent of Ink VOM Retained In Printed Product (20%)

R_M = Percent of Manual Cleaning Solvent VOM retained in wipers (50%)

K = Control efficiency of oxidizers (as demonstrated during testing pursuant to Condition 1.1.7)*

J_I = Capture Efficiency Of Dryer and Control System For Ink VOM (100%)

J_F = Capture Efficiency Of Dryer and Control System For Fountain Solution (70%)

J_A = Capture Efficiency Of Dryer and Control System For Automatic Cleaning Solvent VOM (40%)

* Until testing is performed, the efficiency shall be presumed to be 97%, which is the level of control underlying Condition 1.1.6(a)(i).

c. Emissions from the press dryer on the affected presses shall be calculated based on the following emission factors:

i. Natural Gas Firing:

Pollutant	Emission Factor (lb/mmscf)
CO	84
NO_x	100
PM	7.6
SO_2	0.6
VOM	5.5

ii. Propane Firing:

Pollutant	Emission Factor (lb/1000 gal)
CO	1.9
NO_x	14
PM	0.4
SO_2	0.10S
VOM	0.5

These are the emission factors for natural gas and propane combustion, Tables 1.4-1, 1.4-2, and 1.5-1, AP-42, Volume I, Fifth Edition.

Press Dryer System Emissions (lb) = (Fuel Consumed or Firing Rate) x (The Appropriate Emission Factor)

Thermal Oxidizer (lb) = (Fuel Consumed or Firing Rate) x (The Appropriate Emission Factor)

2.1 Unit: Rotogravure Press (MR-736)
Control: Solvent Recovery System

2.1.1 Description

This new rotogravure press is used to print magazines and other similar printed materials. The new rotogravure press (MR-736) will be controlled by an existing carbon solvent recovery system, which will be expanded to allow the increase in flow with the addition of two absorbers and other ancillary equipment.

2.1.2 List of Emission Units and Pollution Control Equipment

Units	Description	Emission Control Equipment
MR-736	Rotogravure Press	Solvent Recovery System

2.1.3 Applicability Provisions and Applicable Regulations

a. The “affected press” for the purpose of these unit-specific conditions is the new rotogravure press (MR-736) as described in Condition 2.1.1 and 2.1.2. The affected press, other existing presses, and affiliated equipment subject to the NESHAP (See Condition 2.1.3(d) are referred to as the “affected source”.

b. The affected press is subject to 35 IAC 212.321, which provides 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, that exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

c. The affected press is subject to the New Source Performance Standard (NSPS) for publication rotogravure printing, 40 CFR 60, Subpart QQ, because the affected press is not a proof press and construction commenced after October 28, 1980.

Pursuant to the NSPS, 40 CFR 60.432, the Permittee shall not cause to be discharged into the atmosphere from any affected press

VOM equal to more than 16 percent of the total mass of VOM solvent and water used at that facility during any one performance averaging period. The water used includes only that water contained in the waterborne raw inks and related coatings and the water added for dilution with waterborne ink systems.

d. The affected press is part of the affected source subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Printing and Publishing Industry, 40 CFR 63, Subparts KK, because the affected press is located at a major source of hazardous air pollutants (HAPs). [40 CFR 63.820 (a)(1)].

e. The affected press is hereby shielded from compliance with 35 IAC 215 Subpart P: Printing and Publishing. This shield is issued to streamline the applicable requirements for the source, based on the Illinois EPA's finding that compliance with the NSPS assures compliance with 35 IAC 215 Subpart P, following the review requirements of the NSPS are more stringent that 35 IAC 215 Subpart P.

2.1.4 Non-Applicability of Regulations of Concern

This permit is issued based on installation of the affected press not being a major modification subject to 40 CFR 52.21, prevention of Significant Deterioration (PSD) (See Attachment A).

2.1.5 Control Requirements

a. 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.

b. i. The affected press shall be equipped with a Permanent Total Enclosure (PTE) that insures 100% capture of the VOM from the ink and solvents used on the printing units;

ii. VOM emissions from the affected press and associated PTE shall be controlled by an activated carbon solvent recovery system that achieves a minimum 98% VOM removal efficiency across the carbon beds based on a monthly average.

2.1.6 Emission Limitations

Total volatile organic material (VOM) emissions from the affected press shall not exceed 9.85 tons/month and 78.8 tons/year. Compliance with this limit shall be determined based on the amount of VOM contained in materials used on the press, the efficiency of the capture system pursuant to Condition 2.1.5(b)(i), and the efficiency of adsorber system for the affected press as demonstrated pursuant to Condition 2.1.8. 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).

2.1.7 Testing Requirements

a. Within 60 days after achieving the maximum production rate at which the affected press will be operated, but not later than 180 days after initial startup the Permittee shall conduct a performance test in accordance with conditions in 40 CFR 60.433(a).

b. i. If the affected press is using solvent-borne ink system, the Permittee shall determine the VOM content of the raw inks and related coatings used in the affected rotogravure press by the measures described in 40 CFR 60.435(a).

ii. The Permittee using solvent-borne ink system shall use the results of verification analyses by Reference Method 24A to determine compliance when discrepancies with ink manufactures' formulation data occur, as required by 40 CFR 60.435(b).

c. If the Permittee is using a waterborne ink system on the affected press the Permittee shall determine VOM and water content of raw ink and related coatings used in the affected rotogravure press as described in 40 CFR 60.435(c).

d. The Permittee shall determine the density of raw inks, related coating and VOM solvent used in the affected rotogravure press by the measures described in 40 CFR 60.435(d).

e. If compliance with the NSPS, 40 CFR 60 Subpart QQ, is determined according to 40 CFR 60.433(e), (f) or (g), all materials used on the production presses controlled by the common solvent recovery system

shall be tested per the requirements of paragraphs (a) through (d).

f. Criteria for Verification of a Permanent or Temporary Total Enclosure shall be based pursuant to the NESHAP 40 CFR 63.827(e)(1) or 40 CFR Part 51, Appendix M, Method 204.

2.1.8 Monitoring Requirements

The solvent recovery system shall be equipped with inlet and outlet analyzers that are operated at all times the affected press is in operation. The monitoring devices shall be used to monitor the VOM removal efficiency across the carbon beds.

2.1.9 Recordkeeping Requirements

a. Pursuant to the NSPS 40 CFR 60.434, the Permittee shall keep records of the aggregate monthly quantity of all inks, diluent solvents, and cleaning solvents used for all production rotogravure presses, the VOM content of the materials used, and the VOM recovered from the solvent recovery system.

b. Records of aggregate monthly emissions from the production rotogravure presses shall be maintained, based on monthly materials consumption and solvent recovery system performance.

c. If credit is desired for VOM emissions from materials purchased but not consumed or from waste materials, records of materials disposed of or recycled shall be maintained for all inks and solvents on a monthly basis.

d. Records of the following deviations shall be separately maintained:

i. Instances of VOM control efficiency lower than that specified in Condition 2.1.5 as established by the monitoring procedures in Condition 2.1.8.

ii. Instances of VOM emissions in excess of the limitations specified in Condition 2.1.3(c) or 2.1.6 as established by procedures in Condition 2.1.12.

e. The Permittee shall maintain records of the following items for the affected press to demonstrate compliance with Conditions 2.1.6. These records shall

be reviewed and updated as needed whenever a significant change is made in the operation and utilization of the affected press.

i. The VOM content of ink(s) used in the affected press. This information may be obtained from the ink supply serving the affected press.

ii. The monthly usage of VOM on the affected press based on the VOM content of ink as determined from the above records.

iii. The aggregate monthly and annual VOM emission of the affected press, based on its VOM usage and the level of overall VOM control achieved by the capture system and solvent recovery system.

f. The Permittee shall keep the records as required for the affected source pursuant to the NESHAP 40 CFR 63.829.

2.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of the affected rotogravure press with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

A summary report shall be submitted on a semi-annual basis for the affected source as required by the NESHAP 40 CFR 63.830.

2.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

2.1.12 Compliance Procedures

a. Compliance with the VOM emission limit in Condition 2.1.3(c) for the affected press shall be based on the provisions in the NSPS, 40 CFR 60.433.

b. Compliance with the VOM emission limit in Condition 2.1.6 for the affected press shall be calculated based on the following:

Ink VOM Consumption (C_I):

$$C_I = M_I W_I / 100$$

Diluent/Cleaning Solvent VOM Consumption (C_S):

$$C_S = V_S P_S$$

Total VOM Consumption:

$$C_T = C_I + C_S$$

Total VOM Emissions (E_I):

$$E_T = C_T[1-(K/100)(J/100)]$$

Where:

M_I = Weight of ink used (amount supplied to press minus amount discarded or recycled) (pounds)

W_I = Weight percent VOM in ink (wt. %)

V_S = Volume of diluent and cleaning solvent used (amount supplied to press minus amount discarded or recycled) (gallons)

P_S = Pounds VOM per gallon of diluent and cleaning solvent (pounds/gallon)

K = Control efficiency of carbon adsorbers system (monthly average as determined by monitoring pursuant to Condition 2.1.8)

J = Capture Efficiency Of Permanent Total Enclosure Capture System For VOM (100% as demonstrated pursuant to Condition 2.1.7(f))

3.1 Unit: Boiler #7
Control: None

3.1.1 Description

The new boiler is a 33.5 million Btu/hr package steam boiler and will be used to provide additional steam generating capacity required to the new gravure press and the expansion of the carbon solvent recovery system.

3.1.2 List of Emission Units and Pollution Control Equipment

Units	Description	Emission Control Equipment
#7	Steam Boiler (33.5 million Btu/hr)	None

3.1.3 Applicability Provisions and Applicable Regulations

a. The “affected boiler”, for the purpose of these unit-specific conditions, is the boiler as described in Condition 3.1.1 and 3.1.2.

b. The affected boiler is subject to 35 IAC 216 Subpart B, Fuel Combustion Emission Sources, which provides that emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 million Btu/hr) shall not exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].

c. The affected boiler is subject to the New Source Performance Standard (NSPS) for Small Industrial Commercial Boiler, 40 CFR 60, Subparts Dc, because the affected boiler has a maximum design capacity greater than 10 million Btu/hr and construction commenced after June 9, 1989.

Pursuant to the NSPS, 40 CFR 60.43(c) and (d), emission of gases into the atmosphere from the affected boiler, except during periods of startup, malfunction and shutdown, shall not exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

d. The Permittee shall not keep, store, or use distillate fuel oil for the affected boiler with sulfur content greater than the larger of the following two values pursuant to 35 IAC 214.122

i. 0.28 weight percent, or

ii. The wt. percent given by the formula:

Maximum Wt percent sulfur = (0.000015) x (Gross heating value of oil, Btu/lb).

3.1.4 Non-Applicability of Regulations of Concern

The affected boiler is not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of the unit is less than 73.2 MW (250 million Btu/hr).

3.1.5 Control Requirements

a. The only fuel fired in the affected boiler shall be natural gas and distillate fuel oil. Organic liquid by-products or waste material shall not be used in the affected boiler.

b. i. The maximum firing of the affected boiler shall not exceed 33.5 million Btu/hour.

ii. The use of distillate fuel oil shall not exceed 0.24 million gallons per month and 1.92 million gallons per year.

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

3.1.6 Emission Limitations

a. Emissions from the affected boiler shall not exceed the following limits. These limits represent the maximum hourly emission of the boiler as stated in the application, which reflect operation with fuel oil for SO_2 and NO_x and natural gas for CO and VOM.

Pollutants		Emissions (Lb/Hr)
Carbon Monoxide	(CO)	2.81
Nitrogen Oxides	(NO_x)	4.86
Volatile Organic Material	(VOM)	0.18
Sulfur Dioxide	(SO_2)	9.79

b. Emissions from the affected boiler shall not exceed the following annual limits:

Pollutants	Emissions (Tons/yr)
CO	12.33
NO_x	20.63
VOM	0.81
SO_2	38.72

These annual limits address emissions using the maximum allowable quantity of distillate fuel oil, with the remaining fuel being natural gas, at the maximum boiler firing rate for 8,760 hours per year. 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).

These limits ensure that the construction of the affected boiler does not constitute a new major source or major modification pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). (See Attachment B).

3.1.7 Testing Requirements

a. Where the Permittee seeks to demonstrate compliance with the SO_2 standards in the affected boiler based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier as described under Condition 3.1.9 [40 CFR 60.44c(h)].

b. Within 60 days after achieving the maximum production rate at which the affected boiler will be operated, but not later than 180 days after initial startup. The Permittee shall conduct performance tests, as request by the Illinois EPA to determine compliance with Condition 3.1.3(c) the standards using the following procedures and reference methods: [40 CFR 60.45c(a)].

Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions [40 CFR 60.45c(a)(7)].

c. The Illinois EPA shall be allowed to sample all fuels stored at the source.

3.1.8 Monitoring Requirements

This permit is issued based the monitoring requirements of 40 CFR 60.46c(a) and (d) not applying to the affected boiler because the Permittee seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described in Condition 3.1.9(a)(iv) [40 CFR 60.46c(e)].

3.1.9 Recordkeeping Requirements

a. The Permittee shall maintain records of the following items for the affected boiler to demonstrate compliance with Conditions, 3.1.3(c) and (d), 3.1.5(a) and (b), and 3.1.6(a) and (b).

i. Usage of Natural gas for the affected boiler (ft^3/day) [40 CFR 60.48c(g)];

ii. Usage of oil for the affected boiler (gal/day) [40 CFR 60.48c(g)];

iii. The maximum sulfur content (in weight percent) for each shipment of oil used in the affected boiler;

iv. Copies of fuel oil supplier certifications, including

A. The name of the oil supplier [40 CFR 60.48c(f)(i)]; and

B. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil found at 40 CFR 60.41c [40 CFR 60.48c(f)(ii)];

v. Maximum heat content for all fuels (Btu/ft^3 or Btu/gal).

b. The Permittee shall keep records of the following information for the quarterly reports, required by the NSPS (See Condition 3.1.10(b)).

i. Calendar dates in the reporting period [40 CFR 60.48c(e)(1)];

ii. Each 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any non-compliance with the emission standard; and a description of corrective actions taken [40 CFR 60.48c(e)(2)];

iii. Records of fuel supplier certification as described under Condition 3.1.9(a)(iv) [40 CFR 60.48c(e)(11)].

c. The Permittee shall keep records of annual aggregate NO_x, CO, PM, SO_2, and VOM emissions from the affected boiler, based on fuel consumption and the applicable emission factors, with supporting calculations.

3.1.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of the affected boiler with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act.

Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

i. Notification within 60 days of operation of an affected fuel combustion unit that may not have been in compliance with the opacity limitations in Condition 3.1.3(c), with a copy of such record for each incident.

ii. If there is an exceedance of sulfur content of oil in excess of the limit specified in Condition 3.1.3(d), the Permittee shall submit a report within 30 days after receipt of a noncompliant shipment of fuel oil.

iii. Emissions of NO_x, CO, SO_2, or VOM from the affected boiler in excess of the limits specified in Condition 3.1.6(a) based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

b. The Permittee shall submit quarterly reports to the Illinois EPA. Each quarterly report shall be postmarked by the 30th day following the end of the reporting period. The reports shall include the information in Condition 3.1.9(b). In addition to the fuel supplier certification required in Condition 3.1.9(b), the quarterly reports shall include a certified statement signed by the Permittee that the records of fuel supplier certifications submitted represent all of the fuel consumed during the quarter [40 CFR 60.48c(d) and (e)].

3.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

3.1.12 Compliance Procedures

a. Compliance with Condition 3.1.3(b) and (c) is assumed to be achieved by the work practices inherent in operation of the affected boiler, thus no compliance procedures are set in this permit addressing this regulation.

b. Compliance with the emission limits in Condition 3.1.6(a), shall be based on the recordkeeping requirements in Condition 3.1.9 and the emission factors and formulas listed below:

i. Emissions from the affected boiler burning natural gas shall be calculated based on the most recent stack test emission factors or the following emission factors:

Pollutants	Emission Factor Lb/million scf
PM	7.6
CO	84
NO_x	100
VOM	5.5
SO_2	0.6

ii. Emissions from the affected boiler burning distillate fuel oil shall be calculated based on the most recent stack test emission factors or the following emission factors:

Pollutants	Emission Factor Lb/1000 gal
PM	1.3
CO	5
NO_x	20
VOM	0.34
SO_2	144S*

* Sulfur content in the fuel oil as required by Condition 3.1.3(d).

4.0 The new thermal oxidizer, the lithographic press, the rotogravure press and the boiler may be operated for a period of 270 days under this construction permit.

Please note that the Permittee should update their CAAPP application to include this equipment by submitting form 505-CAAPP- “Supplement to CAAPP Application” along with all other appropriate information.

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

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

DES:RNG:jar

cc: Region 3

ATTACHMENT A

Attainment PSD Applicability for Volatile Organic Material (VOM)

Table I – Emissions Increases Associated With The Proposed Modification

Item of Equipment	Proposed Commencement of Operation Date	VOM Emissions Increase (Tons/Year)	Permit Number
Press MM-718	2001	37.5	01070002
Press MR-736	2001	78.8	01070002
Boiler #7	2001	0.81	01070002

Table II – Source-Wide Creditable Contemporaneous Emission Increases

Item of Equipment	Commencement of Operation Date	VOM Emissions Increase (Tons/Year)	Permit Number
Press MM-721	1999	37.7	99070077
Press MM-717	1998	36.6	97120012

Table III – Source-Wide Creditable Contemporaneous Emission Decreases

Item of Equipment	Commencement of Operation Date	VOM Emissions Increase (Tons/Year)	Permit Number
Press MM-711	2000	-49.2	81080021
Press MM-710*	2001	-48.1	81080022
Press MM-714*	2001	-69.8	84100027

Table IV – Overall Emissions Increase

	(Tons/Year)
Increases Associated With The Proposed Modification	117.11
Contemporaneous Emission Increases	74.30
Contemporaneous Emission Decrease	-167.10
Total Net Change	24.31

* Decrease in existing presses, which were previously uncontrolled and for the purpose of this project will be controlled by the new thermal oxidizer system with a control efficiency of 97%.

ATTACHMENT B

Attainment PSD Applicability for Sulfur Dioxide (SO_2)

Table I – Emissions Increases Associated With The Proposed Modification

Item of Equipment	Fuel	Proposed Commencement of Operation Date	VOM Emissions Increase (Tons/Year)	Permit Number
Press MM-718 Dryer	Natural Gas	2001	0.013	01070002
Thermal Oxidizer	Natural Gas	2001	0.009	01070002
Boiler #7	Oil and/or Natural Gas	2001	38.72	01070002

Table II – Overall Emissions Increase

	(Tons/Year)
Increases Associated With The Proposed Modification	38.74

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