INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53 IGCN 1003
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: October 1, 2007

RE: R.R. Donnelley & Sons-COMB / 107-24571-00052

FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 03/23/06

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Jessica Ortiz
R. R. Donnelley & Sons Company
600 West State Road 32
Crawfordsville, IN 47933-8964

Re: 107-24571-00052
Significant Source Modification to
Part 70 Permit 107-5963-00052

Dear Ms. Ortiz,

R. R. Donnelley & Sons Company was issued a Part 70 operating permit on June 21, 2002 for a book printing and binding operation located at 1009 Sloan Street, Crawfordsville, IN 47933-2743. An application to modify the emission source was received on April 11, 2007. Pursuant to 326 IAC 2-7-10.5, the following emission units are approved for construction at the source:

(a) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(b) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(c) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(d) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(e) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(f) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(g) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

(h) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-3, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7B(S).

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until Significant Permit Modification 107-24641-00052 has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, press 0 and ask for Allen R. Davidson or extension 3-5693, or dial (317) 233-5693.

Sincerely,

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

Attachments
ARD

cc: File - Montgomery County
Montgomery County Health Department
Air Compliance Section Inspector - Jennifer Schick
Compliance Data Section
Administrative and Development

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PART 70 SIGNIFICANT SOURCE MODIFICATION
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

R.R. Donnelley & Sons Company
1009 Sloan Street
Crawfordsville, IN 47933-2743

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; and denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in condition B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Significant Source Modification 107-24571-00052	
Issued by: Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date:

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a book printing and binding operation.

Source Address:	1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address:	1009 Sloan Street, Crawfordsville, IN 47933-2743
Phone Number:	(765) 364 -1300
SIC Code:	2732
County Location:	Montgomery
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This book printing and binding operation consists of the following emission units and pollution control devices:

North Plant:

(1) Four (4) natural gas or propane fired boilers, with a maximum rating of 20.9 MMBtu (million British thermal units) per hour each:

(a) Boiler #1(N) with emissions exhausting through stack SB-4A(N).

(b) Boiler #2(N) with emissions exhausting through stack SB-4B(N).

(c) Boiler #3(N) with emissions exhausting through stack SB-4C(N).

(d) Boiler #4(N) with emissions exhausting through stack SB-4D(N).

(2) One (1) natural gas or propane fired boiler, with a maximum rating of 2.56 MMBtu (million British thermal units) per hour: Boiler #5(N) with emissions exhausting through stack SB-4E(N).

(3) Four (4) Paper Trim Cyclones:

(a) Paper Trim Cyclone #1(N) emissions exhausting through stack SBP-5H(N).

(b) Paper Trim Cyclone #2(N) emissions exhausting through stack SBP-5I(N).

(c) Paper Trim Cyclone #3(N) emissions exhausting through stack SBP-5J(N).

(d) Paper Trim Cyclone #4(N) emissions exhausting through stack SBP-5K(N).

(4) Two (2) Paper Dust Collectors:

(a) Dust Collector #1(N) consists of a cyclone followed by a baghouse for particulate control and is exhausted through SD-6A(N).

(b) Dust Collector #2(N) consists of a baghouse for particulate control and is exhausted through SD-6B(N).

(5) Two (2) web offset lithographic printing presses, controlled by one (1) 7.6 MMBtu per hour natural gas fired thermal oxidizer ("North Oxidizer") exhausting to one (1) stack identified as SP-5Y(N) in heatset mode, including:

(a) One (1) Mitsubishi web offset lithographic printing press with two (2) units and two (2) webs identified as Press 268 with a maximum line speed of 1600 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, exhausting to Vent SP-5AA(N) in nonheatset mode; and

(b) One (1) Toshiba web offset lithographic printing Press with four (4) units and two (2) webs identified as Press 269 with a maximum line speed of 1600 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, exhausting to Vent SP-5BB(N) in nonheatset mode.

(6) One (1) Hantscho web offset lithographic printing Press with two (2) units and two (2) webs identified as Press 240 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5R(N). The press may operate in either a heatset or nonheatset mode.

(7) One (1) KBA Compacta web offset lithographic printing Press with two (2) units and two (2) webs identified as Press 281 with a maximum line speed of 1100 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5S(N). The press may operate in either a heatset or nonheatset mode.

(8) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 245 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5Q(N). The press may operate in either a heatset or nonheatset mode.

(9) One (1) Timson web offset lithographic printing press with one (1) unit and one (1) web identified as Press 242 with a maximum line speed of 1200 feet per minute and a maximum printing width of 47 inches, with associated in-line equipment, exhausting to one (1) stack SP-5Z(N). The press may operate in either a heatset or nonheatset mode.

(10) One (1) Timson web offset lithographic printing press with one (1) unit and one (1) web identified as Press 243 with a maximum line speed of 1200 feet per minute and a maximum printing width of 47 inches, with associated in-line equipment, exhausting to one (1) stack SP-5AA(N). The press may operate in either a heatset or nonheatset mode.

(11) One (1) Harris web offset lithographic printing press with two (2) units and two (2) webs identified as Press 285 with a maximum line speed of 825 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5K(N). The press may operate in either a heatset or nonheatset mode.

(12) One (1) Harris web offset lithographic printing press with two (2) units and two (2) webs identified as Press 286 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5L(N). The press may operate in either a heatset or nonheatset mode.

(13) One (1) Harris web offset lithographic printing press with four (4)units and two (2) webs identified as Press 287 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5M(N). The press may operate in either a heatset or nonheatset mode.

(14) One (1) Harris web offset lithographic printing press with four (4) units and two (2) webs identified as Press 288 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5N(N). The press may operate in either a heatset or nonheatset mode.

(15) One (1) Harris web offset lithographic printing press with four (4) units and two (2) webs identified as Press 289 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5O(N). The press may operate in either a heatset or nonheatset mode.

(16) Four (4) UV sheetfed offset lithographic presses:

(a) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 232 with a maximum line speed of 317 feet per minute and a maximum printing width of 25.5 inches including five (5) units and coater, exhausting to one (1) stack SP-5U(N) used as cooling air for UV lamps.

(b) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 233 with a maximum line speed of 317 feet per minute and a maximum printing width of 25.5 inches including five (5) units and coater, exhausting to one (1) stack SP-5U(N) used as cooling air for UV lamps.

(c) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 238 with a maximum line speed of 434 feet per minute and a maximum printing width of 40 inches including six (6) units and coater, exhausting to one (1) stack SP-5V(N) used as cooling air for UV lamps.

(d) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 239 with a maximum line speed of 473 feet per minute and a maximum printing width of 40 inches including two (2) units and coater, exhausting to one (1) stack SP-5W(N) used as cooling air for UV lamps.

South Plant:

(1) Three (3) natural gas or propane fired boilers, with a maximum rating of 25.1 MMBtu (million British thermal units) per hour each:

(a) Boiler #1(S) with emissions exhausting through stack SB-4A(S).

(b) Boiler #2(S) with emissions exhausting through stack SB-4B(S).

(c) Boiler #3(S) with emissions exhausting through stack SB-4C(S).

(2) Four (4) Paper Trim Cyclones:

(a) Paper Trim Cyclone #1(S) emissions exhausting through stack SBP-5E(S).

(b) Paper Trim Cyclone #2(S) emissions exhausting through stack SBP-5E(S).

(c) Paper Trim Cyclone #3(S) emissions exhausting through stack SBP-5E(S).

(d) Paper Trim Cyclone #4(S) emissions exhausting through stack SBP-5E(S).

(3) Two (2) Paper Dust Collectors:

(a) Dust Collector #1(S) consists of a two (2) cyclones each followed by a baghouse (2 total) for particulate control and are exhausted through SD-6A(S) and new exhaust point SD6C(S).

(b) Dust Collector #2(S) consists of a baghouse for particulate control and is exhausted through SD-6B(S).

(4) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 262 with a maximum line speed of 1708 feet per minute and a maximum printing width of 61 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5N(S) in nonheatset mode.

(5) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 270 with a maximum line speed of 807 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to SP-5F(S). The press may operate in either a heatset or nonheatset mode.

(6) One (1) Cottrell web offset lithographic printing press with four (4) units and two (2) webs identified as Press 272 with a maximum line speed of 1000 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment, exhausting to one (1) stack SP-5D(S). The press may operate in either a heatset or nonheatset mode.

(7) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 273 with a maximum line speed of 1615 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5L(S) in nonheatset mode.

(8) One (1) Cottrell web offset lithographic printing press with four (4) units and two (2) webs identified as Press 276 with a maximum line speed of 1200 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment, exhausting to one (1) stack SP-5E(S). The press may operate in either a heatset or nonheatset mode.

(9) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 260 with a maximum line speed of 1615 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5I(S) in nonheatset mode.

(10) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 261 with a maximum line speed of 1500 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5J(S) in nonheatset mode.

(11) One (1) Hantscho web offset lithographic printing press with one (1) unit and one (1) web identified as Press 290 with a maximum line speed of 800 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5G(S). The press may operate in either a heatset or nonheatset mode.

(12) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 291 with a maximum line speed of 800 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5H(S). The press may operate in either a heatset or nonheatset mode.

(13) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 293 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5K(S). The press may operate in either a heatset or nonheatset mode.

(14) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 294 with a maximum line speed of 1076 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5M(S). The press may operate in either a heatset or nonheatset mode.

(15) One (1) Hantscho web offset lithographic printing press with two (2) units and two (2) webs identified as Press 295 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5P(S). The press may operate in either a heatset or nonheatset mode.

(16) One (1) Harris web offset lithographic printing press with two (2) units and two (2) webs identified as Press 296 with a maximum line speed of 860 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5Q(S). The press may operate in either a heatset or nonheatset mode.

(17) One (1) Heidelberg sheetfed offset lithographic press identified as Press 258 with a maximum line speed of 505 feet per minute and a maximum printing width of 40.5 inches including six (6) units and coater, exhausting to one (1) stack SP-5R(S) used as cooling air for electric heaters.

(18) One (1) In-line Stainer 192 used for edge staining paper using low pressure-high volume spray coating and using dry filters for overspray control and exhausting through stack BS-4X(N).

(19) One (1) nonheatset, sheet-fed, offset lithographic printing press, identified as Press 250, constructed in 2006, exhausting to stack SP-5U(s), capacity: 13,000 sheets (14.56 million square inches) per hour.

(20) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(21) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(22) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(23) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(24) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(25) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(26) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-1, rated at 1.7 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-5T(S).

(27) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

(28) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-3, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7B(S).

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21) that have applicable requirements.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T107-5963-00052, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.

(c) The "responsible official" is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, IL 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

The PMP extension notification does not require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMPs do not require the certification by the a responsible official as defined by 326 IAC 2-7-1(34).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification, which shall be submitted by the Permittee, does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions. The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements, which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ has issued the modification. [326 IAC 2-7-12(b)(7)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T107-5963-00052 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12][40 CFR 72]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, IL 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b),(c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

B.22 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee’s right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C **SOURCE OPERATION CONDITIONS**

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations for Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), the particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which:

(a) has a maximum process weight rate less than 100 pounds per hour, and

(b) the methods in 326 IAC 6-3-2(b) through (d) do not apply

shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
MC 61-52 IGCN 1003
Indianapolis, IN 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-41, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited, pursuant to the provisions of 40 CFR 61, Subpart M, is federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.11 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

within ninety (90) days after the date of issuance of this permit.

The ERP does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34)

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.14 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.15 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records;

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the a responsible official as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.17 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]

(a) Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, IN 46204-2251

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

C.18 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long

as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

(c) If there is a "project" (as defined in 326 IAC 2-2-1(qq)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(ee)) and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

(1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

(a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

(f) If the Permittee is required to comply with the recordkeeping provisions of (c) in Section C- General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1(qq)) at an existing emissions unit and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1(xx), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(ii).

(g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3).

(4) Any other information that the Permittee deems fit to include in this report.

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Air Compliance Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

(h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: (Natural gas fired boilers)

North Plant:

(1) Four (4) natural gas or propane fired boilers, with a maximum rating of 20.9 MMBtu (million British thermal units) per hour each:

(a) Boiler #1(N) with emissions exhausting through stack SB-4A(N).

(b) Boiler #2(N) with emissions exhausting through stack SB-4B(N).

(c) Boiler #3(N) with emissions exhausting through stack SB-4C(N).

(d) Boiler #4(N) with emissions exhausting through stack SB-4D(N).

(2) One (1) natural gas or propane fired boiler, with a maximum rating of 2.56 MMBtu (million British thermal units) per hour: Boiler #5(N) with emissions exhausting through stack SB-4E(N).

South Plant:

(1) Three (3) natural gas or propane fired boilers, with a maximum rating of 25.1 MMBtu (million British thermal units) per hour each:

(a) Boiler #1(S) with emissions exhausting through stack SB-4A(S).

(b) Boiler #2(S) with emissions exhausting through stack SB-4B(S).

(c) Boiler #3(S) with emissions exhausting through stack SB-4C(S).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-2-3]

Particulate limitations for Boilers #1(N), #2(N), #3(N), #4(N), #5(N), #1(S), # 2(S) and #3(S) shall be 0.3315 pound particulate matter per MMBtu. Compliance with this limitation is confirmed based on the total PM emission factor for natural gas fired boilers as found in Table 1.4-2 of Supplemental D, March 1998, to the 5th Edition of AP-42, January 1995, of 7.6 pounds per million cubic feet of gas burned.

This limitation is based on the following equation:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

where

C = 50 u/m^3
Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)
N = number of stacks
a = plume rise factor (0.67)
h = stack height (ft)

D.1.2 Sulfur Dioxide (SO_2) [326 IAC 7-1.1-1]

Sulfur content limits for Boiler #1(N), Boiler #2(N), Boiler #3(N), Boiler #4(N), Boiler #5(N), Boiler #1(S), Boiler #2(S) and Boiler #3(S) are not applicable, because they are not capable of burning #2 fuel oil and burn only natural gas and propane and the SO_2 PTE less than 25 tpy.

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.4 Reporting Requirements

The Permittee shall certify, on the form provided, that natural gas was fired in the boiler at all times during each quarter. Alternatively, the Permittee shall report the number of days during which an alternative fuel was burned during each quarter.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Paper Trim Cyclones and Dust Collectors

North:

(3) Four (4) Paper Trim Cyclones:

(a) Paper Trim Cyclone #1(N) emissions exhausting through stack SBP-5H(N).

(b) Paper Trim Cyclone #2(N) emissions exhausting through stack SBP-5I(N).

(c) Paper Trim Cyclone #3(N) emissions exhausting through stack SBP-5J(N).

(d) Paper Trim Cyclone #4(N) emissions exhausting through stack SBP-5K(N).

(4) Two (2) Paper Dust Collectors:

(a) Dust Collector #1(N) consists of a cyclone followed by a baghouse for particulate control and is exhausted through SD-6A(N).

(b) Dust Collector #2(N) consists of a baghouse for particulate control and is exhausted through SD-6B(N).

South:

(2) Four (4) Paper Trim Cyclones:

(a) Paper Trim Cyclone #1(S) emissions exhausting through stack SBP-5E(S).

(b) Paper Trim Cyclone #2(S) emissions exhausting through stack SBP-5E(S).

(c) Paper Trim Cyclone #3(S) emissions exhausting through stack SBP-5E(S).

(d) Paper Trim Cyclone #4(S) emissions exhausting through stack SBP-5E(S).

(3) Two (2) Paper Dust Collectors:

(a) Dust Collector #1(S) consists of a two (2) cyclones each followed by a baghouse (2 total) for particulate control and are exhausted through SD-6A(S) and new exhaust point SD6C(S).

(b) Dust Collector #2(S) consists of a baghouse for particulate control and is exhausted through SD-6B(S).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6-3-2]

Particulate emission limitations for Paper Trim Cyclones #1(N), #2(N), #3(N), #4(N), #1(S), #2(S) #3(S) and #4(S) shall be 10.4 pounds per hour per cyclone, established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour.

The Permittee shall demonstrate compliance with this limit based on an emission factor of one pound of dust emitted per ton of paper handled.

Particulate emission limitation for Dust Collectors #1(N), #2(N), #1(S) and #2(S) shall be 0.551 pound per hour per Dust Collector which shall be achieved by the use of baghouse pollution control devices, in accordance with Section C.1-Particulate Matter Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour 326 IAC 6-3-2(c).

D.2.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

Compliance Determination Requirements

D.2.3 Particulate Matter (PM)

The baghouses for PM control shall be in operation and control emissions from the Paper Dust Collectors at all times that the Paper Dust Collectors are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.4 Visible Emissions Notations

(a) Daily visible emission notations of the stack exhausts for stacks identified as SBP-5H(N), SBP-5I(N), SBP-5J(N), SBP-5K(N), and SBP-5E(S) for Paper Trim Cyclones #1(N), #2(N), #3(N), #4(N), #1(S), #2(S), #3(S) and #4(S) shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.5 Record Keeping Requirements

(a) To document compliance with Condition D.2.4, the Permittee shall maintain a daily record of visible emission notations of the stack exhausts from stacks identified as SBP-5H(N), SBP-5I(N), SBP-5J(N), SBP-5K(N), and SBP-5E(S) for Paper Trim Cyclones #1(N), #2(N), #3(N), #4(N), #1(S), #2(S), #3(S) and #4(S). The Permittee shall include in its daily record any days when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Printing Presses

North Plant:

(5) Two (2) web offset lithographic printing presses, controlled by one (1) 7.6 MMBtu per hour natural gas fired thermal oxidizer ("North Oxidizer") exhausting to one (1) stack identified as SP-5Y(N) in heatset mode, including:

(a) One (1) Mitsubishi web offset lithographic printing press with two (2) units and two (2) webs identified as Press 268 with a maximum line speed of 1600 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, exhausting to Vent SP-5AA(N) in nonheatset mode; and

(b) One (1) Toshiba web offset lithographic printing Press with four (4) units and two (2) webs identified as Press 269 with a maximum line speed of 1600 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, exhausting to Vent SP-5BB(N) in nonheatset mode.

(6) One (1) Hantscho web offset lithographic printing press with two (2) units and two (2) webs identified as Press 240 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5R(N). The press may operate in either a heatset or nonheatset mode.

(7) One (1) KBA Compacta web offset lithographic printing press with two (2) units and two (2) webs identified as Press 281 with a maximum line speed of 1100 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5S(N). The press may operate in either a heatset or nonheatset mode.

(8) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 245 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5Q(N). The press may operate in either a heatset or nonheatset mode.

(9) One (1) Timson web offset lithographic printing press with one (1) unit and one (1) web identified as Press 242 with a maximum line speed of 1200 feet per minute and a maximum printing width of 47 inches, with associated in-line equipment, exhausting to one (1) stack SP-5Z(N). The press may operate in either a heatset or nonheatset mode.

(10) One (1) Timson web offset lithographic printing press with one (1) unit and one (1) web identified as Press 243 with a maximum line speed of 1200 feet per minute and a maximum printing width of 47 inches, with associated in-line equipment, exhausting to one (1) stack SP-5AA(N). The press may operate in either a heatset or nonheatset mode.

(11) One (1) Harris web offset lithographic printing press with two (2) units and two (2) webs identified as Press 285 with a maximum line speed of 825 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5K(N). The press may operate in either a heatset or nonheatset mode.

(12) One (1) Harris web offset lithographic printing press with two (2) units and two (2) webs identified as Press 286 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5L(N). The press may operate in either a heatset or nonheatset mode.

Facility Description [326 IAC 2-7-5(15)]: Printing Presses (Continued)

(13) One (1) Harris web offset lithographic printing press with four (4) units and two (2) webs identified as Press 287 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5M(N). The press may operate in either a heatset or nonheatset mode.

(14) One (1) Harris web offset lithographic printing press with four (4) units and two (2) webs identified as Press 288 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5N(N). The press may operate in either a heatset or nonheatset mode.

(15) One (1) Harris web offset lithographic printing press with four (4) units and two (2) webs identified as Press 289 with a maximum line speed of 825 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5O(N). The press may operate in either a heatset or nonheatset mode.

(16) Four (4) UV sheetfed offset lithographic presses:

(a) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 232 with a maximum line speed of 317 feet per minute and a maximum printing width of 25.5 inches including five (5) units and coater, exhausting to one (1) stack SP-5U(N) used as cooling air for UV lamps.

(b) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 233 with a maximum line speed of 317 feet per minute and a maximum printing width of 25.5 inches including five (5) units and coater, exhausting to one (1) stack SP-5U(N) used as cooling air for UV lamps.

(c) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 238 with a maximum line speed of 434 feet per minute and a maximum printing width of 40 inches including six (6) units and coater, exhausting to one (1) stack SP-5V(N) used as cooling air for UV lamps.

(d) One (1) Heidelberg UV sheetfed offset lithographic press identified as Press 239 with a maximum line speed of 473 feet per minute and a maximum printing width of 40 inches including two (2) units and coater, exhausting to one (1) stack SP-5W(N) used as cooling air for UV lamps.

South Plant:

(4) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 262 with a maximum line speed of 1708 feet per minute and a maximum printing width of 61 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5N(S) in nonheatset mode.

(5) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 270 with a maximum line speed of 807 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to SP-5F(S). The press may operate in either a heatset or nonheatset mode.

Facility Description [326 IAC 2-7-5(15)]: Printing Presses (Continued)

(6) One (1) Cottrell web offset lithographic printing press with four (4) units and two (2) webs identified as Press 272 with a maximum line speed of 1000 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment, exhausting to one (1) stack SP-5D(S). The press may operate in either a heatset or nonheatset mode.

(7) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 273 with a maximum line speed of 1615 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5L(S) in nonheatset mode.

(8) One (1) Cottrell web offset lithographic printing press with four (4) units and two (2) webs identified as Press 276 with a maximum line speed of 1200 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment, exhausting to one (1) stack SP-5E(S). The press may operate in either a heatset or nonheatset mode.

(9) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 260 with a maximum line speed of 1615 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5I(S) in nonheatset mode.

(10) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 261 with a maximum line speed of 1500 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stack SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-5J(S) in nonheatset mode.

(11) One (1) Hantscho web offset lithographic printing press with one (1) unit and one (1) web identified as Press 290 with a maximum line speed of 800 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5G(S). The press may operate in either a heatset or nonheatset mode.

(12) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 291 with a maximum line speed of 800 feet per minute and a maximum printing width of 26 inches, with associated in-line equipment, exhausting to one (1) stack SP-5H(S). The press may operate in either a heatset or nonheatset mode.

(13) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 293 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5K(S). The press may operate in either a heatset or nonheatset mode.

(14) One (1) Hantscho web offset lithographic printing press with four (4) units and two (2) webs identified as Press 294 with a maximum line speed of 1076 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5M(S). The press may operate in either a heatset or nonheatset mode.

Facility Description [326 IAC 2-7-5(15)]: Printing Presses (continued)

(15) One (1) Hantscho web offset lithographic printing press with two (2) units and two (2) webs identified as Press 295 with a maximum line speed of 1000 feet per minute and a maximum printing width of 33 inches, with associated in-line equipment, exhausting to one (1) stack SP-5P(S). The press may operate in either a heatset or nonheatset mode.

(16) One (1) Harris web offset lithographic printing press with two (2) units and two (2) webs identified as Press 296 with a maximum line speed of 860 feet per minute and a maximum printing width of 31 inches, with associated in-line equipment, exhausting to one (1) stack SP-5Q(S). The press may operate in either a heatset or nonheatset mode.

(17) One (1) Heidelberg sheetfed offset lithographic press identified as Press 258 with a maximum line speed of 505 feet per minute and a maximum printing width of 40.5 inches including six (6) units and coater, exhausting to one (1) stack SP-5R(S) used as cooling air for electric heaters.

(18) One (1) In-line Stainer 192 used for edge staining paper using low pressure-high volume spray coating and using dry filters for overspray control and exhausting through stack BS-4X(S).

(19) One (1) nonheatset, sheet-fed, offset lithographic printing press, identified as Press 250, constructed in 2006, exhausting to stack SP-5U(s), capacity: 13,000 sheets (14.56 million square inches) per hour.

(20) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(21) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(22) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(23) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(24) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(25) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(26) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-1, rated at 1.7 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-5T(S).

(27) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

(28) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-3, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7B(S).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Volatile Organic Compounds (VOCs) [326 IAC 8-1-6] [326 IAC 2-7-10.5(d)(5)(A)]

The following presses shall be limited as follows:

(a) Press 240, Press 281, Press 245, Press 289, Press 238, Press 239, Press 290, Press 291, Press 293, Press 294, Press 295, and Press 296:

The VOC content delivered to the applicator of each press shall be limited such that VOC emitted is less than twenty-five (25) tons per twelve (12) consecutive month period. Therefore, the best available control technology (BACT) requirement in 326 IAC 8-1-6 (New Facilities: General Reduction Requirements) does not apply.

For each press, VOC emitted shall be based on the following equation:

VOC emissions (tpy) =
(ink usage in heatset mode * VOC content * 80% flash off) +
(ink usage in nonheatset mode * VOC content * 5% flash off) +
(fountain solution usage * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off) +
(automatic cleaner usage * VOC content * 100% flash off)

(b) Press 258:

The VOC content delivered to the applicator of Press 258 shall be limited such that VOC emitted is less than ten (10) tons per twelve (12) consecutive month period. Any change or modification which may increase the volatile organic compound potential emissions to more than 10 tons per twelve (12) consecutive month period must be reported to IDEM, OAQ.

(c) Press 232 and Press 233:

The VOC content delivered to the applicator of the press shall be limited such that VOC emitted is less than twenty-five (25) tons combined pressroom emissions from Press 232 and Press 233 (combined) per twelve (12) consecutive month period. Therefore, the best available control technology (BACT) requirement in 326 IAC 8-1-6 (New Facilities: General Reduction Requirements) does not apply.

For these two presses, total VOC emitted shall be based on the following equation:

VOC emissions (tpy) =
(ink usage * VOC content * 80% flash off) +
(fountain solution usage * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off)

Amendment 107-10512-00052, issued March 15, 1999, allowed usage of isopropyl alcohol at 750 pounds per year as part of the fountain solution and shall remain in effect.

(d) Press 242 and Press 243:

Pursuant to CP 107-4233 issued April 20, 1995, total VOC content delivered to the applicator of Press 242 and Press 243 shall be limited such that VOC emitted is less than a combined 39 tons per year, calculated on a 12 month rolling monthly average. The total amount of VOC delivered to each press individually, including clean-up solvents, shall be limited such that VOC emitted is less than 25 tons per year, per press, calculated on a 12 month rolling monthly average. Therefore, 326 IAC 2-2 and 326 IAC 8-1-6 do not apply.

For each press, VOC emitted shall be based on the following equation:

VOC emissions (tpy) =
(ink usage in heatset mode * VOC content * 80% flash off) +
(ink usage in nonheatset mode * VOC content * 5% flash off) +
(fountain solution usage * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off) +
(automatic cleaner usage * VOC content * 100% flash off)

(e) Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305, Press 306, Press 268 and Press 269:

(1) <u>Heatset Mode</u>
When operating in heatset mode, Presses 268 and 269 will be controlled by the North Oxidizer, a 7.6 MMBtu per hour thermal oxidizer, and Presses 260, 261, 262, 273, 301, 302, 303, 304, 305 and 306 will be controlled by the regenerative thermal oxidizer system, consisting of one to three operating regenerative thermal oxidizers identified as RTO-1, RTO-2 and RTO-3. The North Oxidizer and the regenerative thermal oxidizer system shall be in operation at all times during which any of the printing presses controlled by the oxidizers/oxidizer system are operating in heatset mode.

(A) Pursuant to CP 107-2726 issued on February 26, 1993 and CP 107-2917 issued on April 6, 1993, Presses 268 and 269 shall not be operated in heatset mode until such time that the combustion temperature in the thermal oxidizer has attained the minimum temperature determined in testing requirements to destroy at least 90% of captured VOC.

(B) Presses 260, 261, 262, 273, 301, 302, 303, 304, 305 and 306 shall not be operated in heatset mode until such time that the combustion temperature(s) in the thermal oxidizer system has attained the minimum temperature(s) determined in testing requirements to destroy at least 97% of captured VOC.

(C) The fountain solution used by Presses 301, 302, 303, 304, 305 and 306 shall not contain greater than 5.0% VOC content by weight, as applied;

(D) The solvents used for blanket and roller washes by Presses 301, 302, 303, 304, 305 and 306 shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 10 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(E) The manual cleaning solvents used by Presses 301, 302, 303, 304, 305 and 306 shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 25 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(2) Nonheatset Mode
When operating any of Presses 260, 261, 262, 273, 301, 302, 303, 304, 305, 306, 268, and 269 in nonheatset mode:

(A) The inks used by that press shall not contain greater than 2.5 pounds of VOC per gallon, as applied;

(B) The fountain solution used by that press shall not contain greater than 2.0% VOC content by weight, as applied; and

(C) The solvents used for blanket and roller washes by that press shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 10 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(D) The manual cleaning solvents used by that press shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 25 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(3) Heatset and Nonheatset Modes

The total VOC content delivered to the applicator of Presses 301, 302, 303, 304, 305 and 306 shall be limited such that VOC emitted shall not exceed 39 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Therefore, 326 IAC 2-2 does not apply.

For each press, VOC emitted shall be based on the following equation:

VOC emissions (tpy) =

(ink usage in heatset mode * VOC content * 80% flash off * 3% emitted after controls) + (ink usage in nonheatset mode * VOC content * 5% flash off) + (fountain solution usage in heatset mode * VOC content * 100% flash off * 32.1% emitted after controls) + (fountain solution usage in nonheatset mode * VOC content * 100% flash off) + (manual cleaner usage * VOC content * 50% flash off) + (automatic cleaner usage in heatset mode * VOC content * 61.2% emitted after controls) + (automatic cleaner usage in nonheatset mode * VOC content * 100% flash off)

D.3.2 Volatile Organic Compounds (VOCs) [326 IAC 8-1-6]

The VOC content delivered to Stainer 192 shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period. Therefore, the best available control technology (BACT) requirement in 326 IAC 8-1-6 (New Facilities: General Reduction Requirements) does not apply.

D.3.3 Clean-up Solvent VOC Emissions Control

The VOC flash off for clean-up solvent is 100%. As derived from USEPA's Alternative Control Techniques Document: Offset Lithographic Printing (EPA 453/R-94 054, June 1994), the accepted shop towel retention factor for clean-up solvent is 50%. A 50% reduction in flash off shall be used in VOC emissions formulae in D.3.1 as an emission control technique and shall meet the following conditions:

(a) The clean-up solvent shall have a VOC content of thirty percent (30%) or less, by weight, or a composite VOC vapor pressure less than or equal to ten (10) millimeters of mercury (Hg) at twenty degrees Celsius ($20^{o}C$); and

(b) The clean-up solvents shall be kept in tightly covered tanks or containers during transport and storage; and

(c) The cleaning cloths used with the clean-up solvents shall be placed in tightly closed containers when not in use and while awaiting off-site transport. The cleaning cloths shall be properly cleaned and disposed.

D.3.4 VOC Emissions

Compliance with Condition D.3.1 and D.3.2 shall be demonstrated within 30 days of the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period and appropriate flash off factors.

D.3.5 Particulate Matter (PM) [326 IAC 6-3]

The PM from Stainer 192 shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.3.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for all of these facilities and all control devices.

Compliance Determination Requirements

D.3.7 Particulate Matter (PM)

The dry filters shall be in operation at all times Stainer 192 is in operation, in order to comply with this limit.

D.3.8 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Testing of the North Oxidizer and regenerative thermal oxidizer RTO-1 to verify their destruction efficiencies was performed on August 18, 2005.

(b) Within sixty (60) days after achieving the maximum rated capacity at which Presses 303 and 304 will be operated, but no later than 180 days after startup, the Permittee shall conduct a performance test to verify the VOC destruction efficiency as per Condition D.3.1 for regenerative thermal oxidizer RTO-2 utilizing methods as approved by the Commissioner.

(c) Within sixty (60) days after achieving the maximum rated capacity at which Presses 305 and 306 will be operated, but no later than 180 days after startup, the Permittee shall conduct a performance test to verify the VOC destruction efficiency as per Condition D.3.1 for regenerative thermal oxidizer RTO-3 utilizing methods as approved by the Commissioner.

(d) These tests shall be repeated at least once every two and one-half (2 1/2) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.3.9 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.3.1 and D.3.2 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.3.10 Thermal Oxidizers

(a) The North Oxidizer shall operate at all times that either of the Presses 268 or 269 are operating in heatset mode.

(b) The regenerative thermal oxidizer system, consisting of one (1) to three (3) oxidizers identified as RTO-1, RTO-2 and/or RTO-3, shall operate at all times that any of Presses 260, 261, 262, 273, 301, 302, 303, 304, 305 and 306 are operating in heatset mode.

(c) When operating the North Oxidizer, the thermal oxidizer shall maintain a minimum operating temperature of:

(1) 1350°F, or

(2) the temperature and fan amperage or duct velocity determined at the stack tests that achieves a minimum 90% destruction efficiency of the VOC.

(d) When operating thermal oxidizers RTO-1, RTO-2 or RTO-3, the thermal oxidizer shall maintain a minimum operating temperature of:

(1) 1350°F, or

(2) the temperature and fan amperage or duct velocity determined at the stack tests that achieves a minimum 97% destruction efficiency of the VOC.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.11 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on each thermal oxidizer for measuring operating temperature. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate each thermal oxidizer at or above the 3-hour average temperature of 1350°F.

(b) The Permittee shall determine, for each thermal oxidizer, the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with the control efficiency requirement in Condition D.3.1(e)(1), as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall operate each thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

D.3.12 Parametric Monitoring

(a) The Permittee shall determine, for each thermal oxidizer, the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with the control efficiency requirement in Condition D.3.1(e)(1), as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per week when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

D.3.13 Particulate Matter Monitoring

(a) Pursuant to CP 107-2853 daily inspection from the in-line Stainer Press 192 shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray while in operation. If a condition exists which should result in a response step, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. During periods of inclement weather, these inspections shall be performed as weather permits. If a condition exists which should result in a response step, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.14 Record Keeping Requirements

(a) To document compliance with Conditions D.3.1, D.3.2 and D.3.3, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.3.1, D.3.2 and D.3.3:

(1) The amount and VOC content of each ink, fountain solution, coating material and solvent used. Records shall include purchase orders, invoices, material safety data sheets (MSDS) or other documentation necessary to verify the type and amount used. Ink usage records shall indicate whether the ink was used in heatset or nonheatset mode. Solvent usage records shall differentiate between those used in coatings and ink and those used as cleanup solvents;

(2) The volume weighted VOC content of the nonheatset inks used on Presses 260, 261, 262, 273, 301, 302, 303, 304, 305, 306, 268, and 269 for each month;

(3) The total VOC usage for each month; and

(4) The weight of VOCs emitted for each compliance period.

(b) To document compliance with Condition D.3.13, the Permittee shall maintain a log of weekly overspray observations.

(c) To document the compliance with Condition D.3.10 and D.3.11, the continuous temperature records for the thermal oxidizers and the temperature used to demonstrate compliance during the most recent compliance stack test and weekly records of the duct pressure or fan amperage.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.15 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.1 and D.3.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify) _____

☐ Report (specify) _____

☐ Notification (specify) _____

☐ Affidavit (specify) _____

☐ Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Signature:
Printed Name:
Title/Position:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
AIR COMPLIANCE BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052

This form consists of 2 pages **Page 1 of 2**

☐	This is an emergency as defined in 326 IAC 2-7-1(12) - The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and - The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe: Type of Pollutants Emitted: TSP, PM_{10}, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
NATURAL GAS FIRED BOILER CERTIFICATION

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Report period
Beginning: _____
Ending: _____

Boiler Affected	Alternate Fuel	Days burning alternate fuel	
		From	To

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052
Facilities: (per press) Press 240, Press 281, Press 245, Press 289, Press 290, Press 291, Press 293, Press 294, Press 295, Press 296, Press 258, Press 238, Press 239, and Press 232 and Press 233 (combined)
Parameter: VOC
Limit: The VOC content delivered to the applicator of the press shall be limited such that VOC emitted is less than twenty-five (25) tons per twelve (12) consecutive month period. Therefore, the best available control technology (BACT) requirement in 326 IAC 8-1-6 (New Facilities: General Reduction Requirements) does not apply. VOC emitted will be based on the following equation:

VOC emissions (tpy) =
(ink usage in heatset mode * VOC content * 80% flash off) +
(ink usage in nonheatset mode * VOC content * 5% flash off) +
(fountain solution usage * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off) +
(automatic cleaner usage * VOC content * 100% flash off)

Press: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

A certification is required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052
Facility: Press 242 and Press 243
Parameter: VOC
Limit: VOC input usage shall be not exceed a combined 39 tons per year, based on 80% VOC flash-off during web heatset ink usage and 5% VOC flash-off during web nonheatset ink usage, calculated on a 12 month rolling monthly average. The total amount of VOC delivered to each press individually, including clean-up solvents, shall not exceed 25 tons per year, per press, based on 80% VOC flash-off during web heatset ink usage and 5% VOC flash-off during web nonheatset ink usage, calculated on a 12 month rolling monthly average. (Assuming 100% VOC flash off for fountain solution and 50% VOC flash off for cleaner usage)

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

A certification is required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052
Facility: Press 301, Press 302, Press 303, Press 304, Press 305 and Press 306
Parameter: VOC
Limit: VOC emissions shall not exceed a combined 39 tons per year, based on the following equation:

VOC emissions =
(ink usage in heatset mode * VOC content * 80% flash off * 3% emitted after controls) +
(ink usage in nonheatset mode * VOC content * 5% flash off) +
(fountain solution usage in heatset mode * VOC content * 100% flash off *
32.1% emitted after controls) +
(fountain solution usage in nonheatset mode * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off) +
(automatic cleaner usage in heatset mode * VOC content * 61.2% emitted after controls) +
(automatic cleaner usage in nonheatset mode * VOC content * 100% flash off)

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

A certification is required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION and COMPLIANCE MONITORING REPORT

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052
Facility: In-line Stainer 192
Parameter: VOC
Limit: VOC input usage shall be less than twenty-five (25) tons per twelve (12) consecutive month period.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

A certification is required for this report.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Significant Source Modification
and a Significant Permit Modification to a Part 70 Operating Permit

Source Description and Location

Source Name:	**R. R. Donnelley & Sons Company**
Source Location:	**1009 Sloan Street, Crawfordsville, IN 47933-2743**
County:	**Montgomery**
SIC Code:	**2732**
Operation Permit No.:	**107-5963-00052**
Operation Permit Issuance Date:	**June 21, 2002**
Source Modification No.:	**107-24571-00052**
Permit Modification No.:	**107-24641-00052**
Permit Reviewer:	**Allen R. Davidson**

Existing Approvals

The emission source was issued Part 70 Operating Permit 107-5963-00052 on June 21, 2002. The source has since received the following approvals:

(a) Administrative Amendment 107-17119-00052, issued on February 4, 2003, which changed descriptive language for Press 258.

(b) Significant Permit Modification 107-16731-00052, issued on March 28, 2003, which removed monitoring conditions for eight paper trim cyclones.

(c) Administrative Amendment 107-17255-00052, issued on April 8, 2003, which replaced an existing paper dust collector with cyclones followed by baghouses.

(d) Administrative Amendment 107-17454-00052, issued on July 25, 2003, which removed an existing paper dust collector and changed the identification number of Press 241 to Press 281.

(e) Administrative Amendment 107-18767-00052, issued on March 15, 2004, which moved In-Line Stainer 192 from the North Plant to the South Plant.

(f) Minor Permit Modification 107-21171-00052, issued on August 5, 2005, which added regenerative thermal oxidation to Presses 260, 261, 262 and 273. This modification also implemented updates, additions and corrections to various conditions in Sections B and C of the permit.

(g) Minor Source Modification 107-22646-00052, issued on April 3, 2006, which added Press 250 to the South Plant.

(h) Minor Permit Modification 107-22728-00052, issued on June 1, 2006, which incorporated the requirements of Minor Source Modification 107-22646-00052 into the Part 70 permit.

(i) Administrative Amendment 107-22827-00052, issued on June 21, 2006, which removed Press 251 from the Part 70 permit and allows twenty-five (25) existing web offset lithographic printing presses to operate in either heatset or nonheatset mode.

Significant Permit Modification 107-23347-00052, which re-evaluates the VOC best available control technology (BACT) for six (6) existing presses (Presses 260, 261, 262, 268, 269 and 273) when operating as nonheatset presses, is pending. The public comment period for Significant Permit Modification 107-23347-00052 ended on January 21, 2007.

The applications for Significant Source Modification 107-23923-00052 and Significant Permit Modification 107-24062-00052, which involved construction and operation of a lithographic printing press identified as Press 300, were withdrawn by R. R. Donnelley & Sons Company on April 12, 2007.

County Attainment Status

The emission source is located in Montgomery County.

Pollutant	Status
PM_{10}	attainment
$PM_{2.5}$	attainment
SO_2	attainment
NO_2	attainment
8-hour Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Montgomery County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) Montgomery County has been classified as attainment for $PM_{2.5}$. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for $PM_{2.5}$ emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for $PM_{2.5}$ emissions, it has directed states to regulate PM_{10} emissions as a surrogate for $PM_{2.5}$ emissions.

(c) Montgomery County has been classified as attainment or unclassifiable in Indiana for all other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(d) The revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana took effect on October 25, 2006.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	Potential to Emit (tons/yr)
PM	less than 250
PM_{10}	less than 250
SO_2	less than 250
VOC	greater than 250
CO	less than 250
NO_x	less than 250

(a) This emission source, a book printing and binding operation, is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

(b) This existing source is classified as a major stationary source under PSD (326 IAC 2-2). Although it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1), a regulated pollutant is emitted at a rate of 250 tons per year or more.

The table below summarizes the potential to emit HAPs for the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

HAPs	Potential to Emit (tons/yr)
Single HAP	greater than 10
Total HAPs	greater than 25

(a) This existing source is a major source of HAPs, as defined in 40 CFR 63.41, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Background and Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed an application, submitted by R. R. Donnelley & Sons Company on April 11, 2007, relating to the operation of a book printing and binding operation located at 1009 Sloan Street, Crawfordsville, IN 47933-2743. The application involves a request to add six (6) new lithographic printing presses to the emission source, with volatile organic compound (VOC) emissions controlled by a regenerative thermal oxidizer system consisting of one (1) existing and two (2) new thermal oxidizers.

New Emission Units and Pollution Control Equipment

The application includes information relating to the prior approval for the construction and operation of the following equipment:

(a) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(b) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches,

with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(c) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(d) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(e) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(f) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(g) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

(h) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-3, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7B(S).

Existing Emission Units and Pollution Control Equipment

The application includes information relating to the prior approval for the operation of the following equipment:

(a) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-1, rated at 1.7 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-5T(S).

Insignificant Activities

This application does not involve any insignificant activities, as defined in 326 IAC 2-7-1(21).

Enforcement Issues

There are no enforcement actions pending against this emission source.

Emission Calculations

Since the new presses will be able to operate in either heatset mode or nonheatset mode, emissions were calculated under both scenarios. See Appendix A of this document for detailed emission calculations (18 pages).

Permit Level Determination - Part 70

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. Since heatset mode has the worst-case PTE before controls, the table lists the PTE before controls for heatset mode:

Pollutant	Potential to Emit (tons/yr)
PM	0.23
PM_{10}	0.92
SO_2	0.07
VOC	1081.1
CO	10.14
NO_x	12.07

HAPs	Potential to Emit (tons/yr)
Ethylene Glycol	1.62
Glycol Ethers*	3.24
Hydroquinone	2.50
Cumene	0.12
Xylene	0.17
Formaldehyde	0.01
Hexane	0.22
Total	7.65

* Excludes ethylene glycol monobutyl ether (CAS 111-76-2), which was delisted as a HAP by the U.S. EPA on November 29, 2004.

Justification for Significant Source Modification

The source modification involves a modification where the increase in potential to emit is greater than twenty-five (25) tons per year of volatile organic compounds (VOC). As a result, this change is classifiable as a significant source modification under 326 IAC 2-7-10.5(d)(3).

Justification for Significant Permit Modification

The revision involves a case-by-case determination under 326 IAC 8-1-6. As a result, this change cannot be processed as an Administrative Amendment under 326 IAC 2-7-11 and is expressly prohibited from being processed as a Minor Permit Modification under 2-7-12(b). It must be processed as a Significant Permit Modification under 326 IAC 2-7-12(d).

Permit Level Determination - PSD

Since the new presses will be able to operate in either heatset mode or nonheatset mode, emissions were calculated under both scenarios. The potential to emit is based on the worst-case operating scenario, which is heatset mode for all pollutants except VOC and nonheatset mode for VOC.

The tables below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 Significant Source Modification and Significant Permit Modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Emission Unit	PM	PM_{10}	SO_2	NO_X	VOC	CO
Press 301	0.02	0.10	0.01	1.31		1.10
Press 302	0.03	0.13	0.01	1.76		1.48
Press 303	0.02	0.10	0.01	1.31		1.10
Press 304	0.04	0.14	0.01	1.87	39.66	1.57
Press 305	0.02	0.10	0.01	1.31		1.10
Press 306	0.04	0.14	0.01	1.87		1.57
Regenerative Thermal Oxidizer RTO-2	0.02	0.10	0.01	1.31		1.10
Regenerative Thermal Oxidizer RTO-3	0.02	0.10	0.01	1.31		1.10
Total (tons/yr)	0.23	0.92	0.07	12.07	39.66	10.14
PSD Significant Levels:	25	15	40	40	40	100

The potential to emit of this modification in heatset mode after controls and before limits is 32.4 tons of VOC per year, and the potential to emit of this modification in nonheatset mode after controls and before limits is 97.5 tons of VOC per year. VOC emissions from natural gas combustion are 0.66 tons per year. R. R. Donnelley & Sons Company accepted a federally enforceable condition that the VOC content delivered to the applicator of Presses 301, 302, 303, 304, 305 and 306 shall be limited such that VOC emitted is less than thirty-nine (39) tons per twelve (12) consecutive month period. For each press, VOC emitted shall be based on the following equation:

VOC emissions (tpy) =
(ink usage in heatset mode * VOC content * 80% flash off * 3% emitted after controls) +
(ink usage in nonheatset mode * VOC content * 5% flash off) +
(fountain solution usage in heatset mode * VOC content * 100% flash off *
32.1% emitted after controls) +
(fountain solution usage in nonheatset mode * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off) +
(automatic cleaner usage in heatset mode * VOC content * 61.2% emitted after controls)
+ (automatic cleaner usage in nonheatset mode * VOC content * 100% flash off)

Compliance with the permit condition ensures that the potential to emit from this modification does not exceed forty (40) tons of VOC per year and therefore will render the requirements of 326 IAC 2-2 not applicable.

Federal Rule Applicability Determination

326 IAC 12 and 40 CFR Part 60 (New Source Performance Standards (NSPS))

There are no New Source Performance Standards applicable to this proposed modification. 40 CFR 60 Subpart QQ, "Standards Of Performance For The Graphic Arts Industry: Publication Rotogravure Printing," is not applicable since the printing presses at this source are not rotogravure printing presses.

326 IAC 14, 326 IAC 20 and 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants (NESHAPs))

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) applicable to this proposed modification. 40 CFR 63 Subpart KK, "National Emission Standards for the Printing and Publishing Industry," is not applicable since the printing presses at this source are not publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses.

40 CFR Part 64 (Compliance Assurance Monitoring)

Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:

(a) have a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;

(b) are subject to an emission limitation or standard for that pollutant; and

(c) use a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The major source threshold is 100 tons of VOC per year. Each of Presses 301, 302, 303, 304, 305 and 306 has a potential to emit before controls that is greater than the major source threshold. Therefore, each of Presses 301, 302, 303, 304, 305 and 306 is subject to 40 CFR Part 64, Compliance Assurance Monitoring. Since each of Presses 301, 302, 303, 304, 305 and 306 has a potential to emit after controls that is less than the major source threshold, the CAM requirements will not apply until the issuance of Part 70 Operating Permit Renewal 107-23664-00052, which is pending. The CAM plan has been submitted as part of the renewal application.

State Rule Applicability Determination – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is a major source for Prevention of Significant Deterioration, 326 IAC 2-2. Although it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1), a regulated pollutant is emitted at a rate of 250 tons per year or more.

This modification to an existing major stationary source is not major for Prevention of Significant Deterioration (PSD) because the emissions increase of all attainment regulated pollutants is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply to this modification.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source was existing as of July 27, 1997. Also, the modification by itself does not have potential to emit greater than ten (10) tons per year of any single HAP or twenty-five (25) tons per year of any combination of HAPs.

State Rule Applicability Determination – Presses 301, 302, 303, 304, 305 and 306

326 IAC 8-2-5 (Paper Coating Operations)

Presses 301, 302, 303, 304, 305 and 306 are not subject to 326 IAC 8-2-5 (Paper Coating Operations). The rule does not apply since the printing process does not fully saturate the substrate. This determination is consistent with the applicability determinations of the existing presses at this emission source, and is consistent with information contained in U.S. EPA document AP-42, Chapter 4.2.2.6, "Paper Coating."

326 IAC 8-5-5 (Graphic Arts Operations)

Presses 301, 302, 303, 304, 305 and 306 are not subject to 326 IAC 8-5-5 (Graphic Arts Operations). The rule does not apply since the printing presses are not packaging rotogravure, publication rotogravure, or flexographic printing presses.

326 IAC 8-1-6 (New facilities; General reduction requirements)

The potential VOC emissions from each of Presses 301, 302, 303, 304, 305 and 306 is greater than twenty-five (25) tons per twelve (12) consecutive month period. Therefore, the best available control technology (BACT) requirement in 326 IAC 8-1-6 (New Facilities: General Reduction Requirements) applies to each of Presses 301, 302, 303, 304, 305 and 306.

See Appendix B of this document for details regarding the BACT determination for Presses 301, 302, 303, 304, 305 and 306.

Proposed Changes

In addition to changes directly related to the application, OAQ will make the following revisions to the Part 70 permit:

(a) OAQ will remove the expiration date from the front of the Part 70 permit. Part 70 Permit 107-5963-00052 will not expire until Part 70 Permit Renewal 107-23664-00052 has been issued or denied.

(b) OAQ will remove the requirement in Condition D.3.14 to keep records of the VOC content of used shop towels, since it is duplicative of the condition's requirement to keep records of the VOC content of cleanup solvent.

The changes listed below are being proposed to Part 70 Operating Permit No. 107-5963-00052. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This book printing and binding operation consists of the following emission units and pollution control devices:

North Plant:

...

South Plant:

...

(4) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 262 with a maximum line speed of 1708 feet per minute and a maximum printing width of 61 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5N(S) in nonheatset mode.

...

(7) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 273 with a maximum line speed of 1615 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5L(S) in nonheatset mode.

...

(9) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 260 with a maximum line speed of 1615 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5I(S) in nonheatset mode.

(10) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 261 with a maximum line speed of 1500 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5J(S) in nonheatset mode.

...

(20) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(21) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(22) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(23) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(24) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(25) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(26) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-1, rated at 1.7 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-5T(S).

(27) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

(28) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-3, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7B(S).

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Printing Presses

North Plant:

...

South Plant:

(4) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 262 with a maximum line speed of 1708 feet per minute and a maximum printing width of 61 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5N(S) in nonheatset mode.

...

(7) One (1) Mitsubishi web offset lithographic printing press with four (4) units and two (2) webs identified as Press 273 with a maximum line speed of 1615 feet per minute and a maximum printing width of 64 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5L(S) in nonheatset mode.

...

(9) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 260 with a maximum line speed of 1615 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a

heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5I(S) in nonheatset mode.

(10) One (1) Toshiba web offset lithographic printing press with four (4) units and one (1) web identified as Press 261 with a maximum line speed of 1500 feet per minute and a maximum printing width of 36 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by ~~one (1)~~ **a** natural gas-fired regenerative thermal oxidizer **system**, ~~identified as RTO-1, rated at 1.7 million British thermal units per hour,~~ exhausting to Stack SP-5T(S)**, SP-7A(S) and/or SP-7B(S)** in heatset mode or Vent SP-5J(S) in nonheatset mode.

...

(20) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(21) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(22) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(23) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(24) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(25) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer

system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(26) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-1, rated at 1.7 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-5T(S).

(27) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

(28) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-3, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7B(S).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.3.1 Volatile Organic Compounds (VOCs) [326 IAC 8-1-6] [326 IAC 2-7-10.5(d)(5)(A)]

The following presses shall be limited as follows:

...

(e) Press 260, Press 261, Press 262, Press 273, **Press 301, Press 302, Press 303, Press 304, Press 305, Press 306,** Press 268 and Press 269:

(1) **Heatset Mode**
When operating in heatset mode, Presses 268 and 269 will be controlled by the North Oxidizer, a 7.6 MMBtu per hour thermal oxidizer, and Presses 260, 261, 262**,** ~~and~~ 273, **301, 302, 303, 304, 305 and 306** will be controlled by the ~~South Oxidizer, a 1.7 MMBtu per hour thermal oxidizer~~ **regenerative thermal oxidizer system, consisting of one to three operating regenerative thermal oxidizers identified as RTO-1, RTO-2 and RTO-3**. The ~~thermal oxidizers~~ **North Oxidizer and the regenerative thermal oxidizer system** shall be in operation at all times during which any of the printing presses controlled by the oxidizers**/oxidizer system** are operating in heatset mode.

(A) Pursuant to CP 107-2726 issued on February 26, 1993 and CP 107-2917 issued on April 6, 1993, Presses 268 and 269 shall not be operated in heatset mode until such time that the combustion temperature in the thermal oxidizer has attained the minimum temperature determined in testing requirements to destroy at least 90% of captured VOC.

(B) Presses 260, 261, 262**,** ~~and~~ 273, **301, 302, 303, 304, 305 and 306** shall not be operated in heatset mode until such time that the combustion temperature**(s)** in the thermal oxidizer **system** has attained the minimum temperature**(s)** determined in testing requirements to destroy at least 97% of captured VOC.

(C) The fountain solution used by Presses 301, 302, 303, 304, 305 and 306 shall not contain greater than 5.0% VOC content by weight, as applied;

(D) The solvents used for blanket and roller washes by Presses 301, 302, 303, 304, 305 and 306 shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 10 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(E) The manual cleaning solvents used by Presses 301, 302, 303, 304, 305 and 306 shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 25 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(2) **Nonheatset Mode**
When operating any of Presses 260, 261, 262, 273, **301, 302, 303, 304, 305, 306**, 268, and 269 in nonheatset mode:

(A) The inks used by that press shall not contain greater than 2.5 pounds of VOC per gallon, as applied;

(B) The fountain solution used by that press shall not contain greater than 2.0% VOC content by weight, as applied; and

(C) The solvents used for blanket and roller washes by that press shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 10 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(D) The manual cleaning solvents used by that press shall comply with at least one (1) of the following:

(i) The solvent shall not have a composite VOC vapor pressure greater than 25 mm Hg at 20°C, or

(ii) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

(3) **Heatset and Nonheatset Modes**

The total VOC content delivered to the applicator of Presses 301, 302, 303, 304, 305 and 306 shall be limited such that VOC emitted shall not exceed 39 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Therefore, 326 IAC 2-2 does not apply.

For each press, VOC emitted shall be based on the following equation:

VOC emissions (tpy) =
(ink usage in heatset mode * VOC content * 80% flash off * 3% emitted after controls) + (ink usage in nonheatset mode * VOC content * 5% flash off) + (fountain solution usage in heatset mode * VOC content * 100% flash off * 32.1% emitted after controls) + (fountain solution usage in nonheatset mode * VOC content * 100% flash off) + (manual cleaner usage * VOC content * 50% flash off) + (automatic cleaner usage in heatset mode * VOC content * 61.2% emitted after controls) + (automatic cleaner usage in nonheatset mode * VOC content * 100% flash off)

D.3.8 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) ~~Within one hundred and eighty (180) days after issuance of this permit, the Permittee shall conduct performance tests to verify VOC destruction efficiency as per Condition D.3.1 for each thermal oxidizer using methods as approved by the Commissioner.~~ **Testing of the North Oxidizer and regenerative thermal oxidizer RTO-1 to verify their destruction efficiencies was performed on August 18, 2005.**

(b) **Within sixty (60) days after achieving the maximum rated capacity at which Presses 303 and 304 will be operated, but no later than 180 days after startup, the Permittee shall conduct a performance test to verify the VOC destruction efficiency as per Condition D.3.1 for regenerative thermal oxidizer RTO-2 utilizing methods as approved by the Commissioner.**

(c) **Within sixty (60) days after achieving the maximum rated capacity at which Presses 305 and 306 will be operated, but no later than 180 days after startup, the Permittee shall conduct a performance test to verify the VOC destruction efficiency as per Condition D.3.1 for regenerative thermal oxidizer RTO-3 utilizing methods as approved by the Commissioner.**

(d) These tests shall be repeated at least once every two and one-half (2 1/2) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.3.10 Thermal Oxidizers

(a) The North Oxidizer shall operate at all times that either of the Presses 268 or 269 are operating in heatset mode.

(b) The ~~South Oxidizer, identified as RTO-1~~ **regenerative thermal oxidizer system, consisting of one (1) to three (3) oxidizers identified as RTO-1, RTO-2 and/or RTO-3**, shall operate at all times that any of Presses 260, 261, 262, ~~and~~ 273, **301, 302, 303, 304, 305 and 306** are operating in heatset mode.

(c) When operating the North Oxidizer, the thermal oxidizer shall maintain a minimum operating temperature of:

(1) 1350°F, or

(2) the temperature and fan amperage or duct velocity determined at the stack tests that achieves a minimum 90% destruction efficiency of the VOC.

(d) When operating ~~the South Oxidizer~~ thermal oxidizers **RTO-1, RTO-2 or RTO-3,** the thermal oxidizer shall maintain a minimum operating temperature of:

(1) 1350°F, or

(2) the temperature and fan amperage or duct velocity determined at the stack tests that achieves a minimum 97% destruction efficiency of the VOC.

D.3.14 Record Keeping Requirements

(a) To document compliance with Conditions D.3.1, D.3.2 and D.3.3, the Permittee shall maintain records in accordance with (1) through ~~(5)~~ **(4)** below. Records maintained for (1) through ~~(5)~~ **(4)** shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.3.1, D.3.2 and D.3.3:

(1) The amount and VOC content of each ink, fountain solution, coating material and solvent used. Records shall include purchase orders, invoices, material safety data sheets (MSDS) or other documentation necessary to verify the type and amount used. Ink usage records shall indicate whether the ink was used in heatset or nonheatset mode. Solvent usage records shall differentiate between those used in coatings and ink and those used as cleanup solvents;

(2) The volume weighted VOC content of the nonheatset inks used on Presses 260, 261, 262, 273, **301, 302, 303, 304, 305, 306,** 268, and 269 for each month;

(3) The total VOC usage for each month; **and**

(4) The weight of VOCs emitted for each compliance period~~; and~~

~~(5) The VOC content of the used shop towels~~.

(b) To document compliance with Condition ~~D.3.12~~ **D.3.13**, the Permittee shall maintain a log of weekly overspray observations.

(c) To document the compliance with Condition D.3.10 and D.3.11, the continuous temperature records for the thermal oxidizers and the temperature used to demonstrate compliance during the most recent compliance stack test and weekly records of the duct pressure or fan amperage.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Furthermore, a quarterly report form as been added to the Part 70 permit, to read as follows:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: R.R. Donnelley & Sons Company
Source Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Mailing Address: 1009 Sloan Street, Crawfordsville, IN 47933-2743
Part 70 Permit No.: T107-5963-00052
Facility: Press 301, Press 302, Press 303, Press 304, Press 305 and Press 306
Parameter: VOC
Limit: VOC emissions shall not exceed a combined 39 tons per year, based on the following equation:

VOC emissions =
(ink usage in heatset mode * VOC content * 80% flash off * 3% emitted after controls) +
(ink usage in nonheatset mode * VOC content * 5% flash off) +
(fountain solution usage in heatset mode * VOC content * 100% flash off *
32.1% emitted after controls) +
(fountain solution usage in nonheatset mode * VOC content * 100% flash off) +
(manual cleaner usage * VOC content * 50% flash off) +
(automatic cleaner usage in heatset mode * VOC content * 61.2% emitted after controls) +
(automatic cleaner usage in nonheatset mode * VOC content * 100% flash off)

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

A certification is required for this report.

Conclusion and Recommendation

The construction and operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 107-24571-00052 and Significant Permit Modification No. 107-24641-00052. The staff recommend to the Commissioner that this Part 70 Significant Source Modification and Significant Permit Modification be approved.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
ID: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/4/2007

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
3.00	26.28

Pollutant

	PM*	PM_{10}*	SO_2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.02	0.10	0.01	1.31	0.07	1.10

*PM emission factor is filterable PM only. PM_{10} emission factor is condensable and filterable PM_{10} combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.0021	0.0012	0.075	1.8	0.0034
Potential Emission in tons/yr	0.000	0.000	0.001	0.024	0.000

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	0.0005	0.0011	0.0014	0.00038	0.0021
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
ID: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/4/2007

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
4.01	35.1276

Pollutant

	PM*	PM_{10}*	SO_2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.03	0.13	0.01	1.76	0.10	1.48

*PM emission factor is filterable PM only. PM_{10} emission factor is condensable and filterable PM_{10} combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.0021	0.0012	0.075	1.8	0.0034
Potential Emission in tons/yr	0.000	0.000	0.001	0.032	0.000

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	0.0005	0.0011	0.0014	0.00038	0.0021
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
ID: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/4/2007

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
4.27	37.4052

Pollutant

	PM*	PM_{10}*	SO_2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.04	0.14	0.01	1.87	0.10	1.57

*PM emission factor is filterable PM only. PM_{10} emission factor is condensable and filterable PM_{10} combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.0021	0.0012	0.075	1.8	0.0034
Potential Emission in tons/yr	0.000	0.000	0.001	0.034	0.000

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	0.0005	0.0011	0.0014	0.00038	0.0021
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
ID: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/4/2007

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
27.55	241.338

	Pollutant					
	PM*	PM_{10}*	SO_2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.23	0.92	0.07	12.07	0.66	10.14

*PM emission factor is filterable PM only. PM_{10} emission factor is condensable and filterable PM_{10} combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.0021	0.0012	0.075	1.8	0.0034
Potential Emission in tons/yr	0.000	0.000	0.009	0.217	0.000

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	0.0005	0.0011	0.0014	0.00038	0.0021
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
301 (Heatset)	2433	50	767271

INK VOCS					
Ink Name	Maxium Coverage (lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	40.0%	80%	767271	147.32
Fountain Solution (as supplied)	0.105	11.8%	100%	767271	4.77
Manual Cleaning Solvent	0.03	100.0%	50%	767271	5.75
Automatic Cleaning Solvent	0.01	31.1%	100%	767271	1.19

Total VOC Emissions =	159.04 ton/yr

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.37	0.00	0.00
Fountain Solution (as supplied)	0.24	0.48	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.03
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.24	0.48	0.37	0.02	0.03

Total for All HAPs Emissions =	1.13 ton/yr

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
302 (Heatset)	1700	66	707668

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	40.0%	80%	707668	135.89
Fountain Solution (as supplied)	0.105	11.8%	100%	707668	4.38
Manual Cleaning Solvent	0.03	100.0%	50%	707668	5.31
Automatic Cleaning Solvent	0.01	31.1%	100%	707668	1.10

Total VOC Emissions =	146.68 ton/yr

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.34	0.00	0.00
Fountain Solution (as supplied)	0.22	0.44	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.02
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.22	0.44	0.34	0.02	0.02

Total for All HAPs Emissions =	1.04 ton/yr

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
303 (Heatset)	2433	50	767271

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	40.0%	80%	767271	147.32
Fountain Solution (as supplied)	0.105	11.8%	100%	767271	4.77
Manual Cleaning Solvent	0.03	100.0%	50%	767271	5.75
Automatic Cleaning Solvent	0.01	31.1%	100%	767271	1.19

Total VOC Emissions = **159.04 ton/yr**

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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updated 11/98

	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.37	0.00	0.00
Fountain Solution (as supplied)	0.24	0.48	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.03
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.24	0.48	0.37	0.02	0.03

Total for All HAPs Emissions = **1.13 ton/yr**

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
304 (Heatset)	2646	66	1101464

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	40.0%	80%	1101464	211.49
Fountain Solution (as supplied)	0.105	11.8%	100%	1101464	6.85
Manual Cleaning Solvent	0.03	100.0%	50%	1101464	8.26
Automatic Cleaning Solvent	0.01	31.1%	100%	1101464	1.71

Total VOC Emissions = **228.32 ton/yr**

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.53	0.00	0.00
Fountain Solution (as supplied)	0.34	0.69	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.04
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.34	0.69	0.53	0.02	0.04

Total for All HAPs Emissions = **1.62 ton/yr**

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
305 (Heatset)	2433	50	767271

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	40.0%	80%	767271	147.32
Fountain Solution (as supplied)	0.105	11.8%	100%	767271	4.77
Manual Cleaning Solvent	0.03	100.0%	50%	767271	5.75
Automatic Cleaning Solvent	0.01	31.1%	100%	767271	1.19

Total VOC Emissions = **159.04 ton/yr**

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.37	0.00	0.00
Fountain Solution (as supplied)	0.24	0.48	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.03
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.24	0.48	0.37	0.02	0.03

Total for All HAPs Emissions = **1.13 ton/yr**

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
306 (Heatset)	2646	66	1101464

INK VOCS					
Ink Name	Maxium Coverage (lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	40.0%	80%	1101464	211.49
Fountain Solution (as supplied)	0.105	11.8%	100%	1101464	6.85
Manual Cleaning Solvent	0.03	100.0%	50%	1101464	8.26
Automatic Cleaning Solvent	0.01	31.1%	100%	1101464	1.71

Total VOC Emissions =	228.32 ton/yr

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.53	0.00	0.00
Fountain Solution (as supplied)	0.34	0.69	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.04
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.34	0.69	0.53	0.02	0.04

Total for All HAPs Emissions =	1.62 ton/yr

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
301 (Nonheatset)	2433	50	767271

INK VOCS					
Ink Name	Maxium Coverage (lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	11.0%	5%	767271	2.53
Fountain Solution (as supplied)	0.105	11.8%	100%	767271	4.77
Manual Cleaning Solvent	0.03	100.0%	50%	767271	5.75
Automatic Cleaning Solvent	0.01	31.1%	100%	767271	1.19

Total VOC Emissions = **14.25 Ton/yr**

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.01	0.00	0.00
Fountain Solution (as supplied)	0.24	0.48	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.03
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.24	0.48	0.01	0.02	0.03

Total for All HAPs Emissions = **0.76 ton/yr**

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
302 (Nonheatset)	1700	66	707668

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	11.0%	5%	707668	2.33
Fountain Solution (as supplied)	0.105	11.8%	100%	707668	4.40
Manual Cleaning Solvent	0.03	100.0%	50%	707668	5.31
Automatic Cleaning Solvent	0.01	31.1%	100%	707668	1.10

Total VOC Emissions =	13.14 Ton/yr

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.01	0.00	0.00
Fountain Solution (as supplied)	0.22	0.44	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.02
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.22	0.44	0.01	0.02	0.02

Total for All HAPs Emissions =	0.71 ton/yr

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
303 (Nonheatset)	2433	50	767271

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	11.0%	5%	767271	2.53
Fountain Solution (as supplied)	0.105	11.8%	100%	767271	4.77
Manual Cleaning Solvent	0.03	100.0%	50%	767271	5.75
Automatic Cleaning Solvent	0.01	31.1%	100%	767271	1.19

Total VOC Emissions = **14.25 Ton/yr**

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.01	0.00	0.00
Fountain Solution (as supplied)	0.24	0.48	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.03
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.24	0.48	0.01	0.02	0.03

Total for All HAPs Emissions = **0.76 ton/yr**

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
304 (Nonheatset)	2646	66	1101464

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	11.0%	5%	1101464	3.63
Fountain Solution (as supplied)	0.105	11.8%	100%	1101464	6.85
Manual Cleaning Solvent	0.03	100.0%	50%	1101464	8.26
Automatic Cleaning Solvent	0.01	31.1%	100%	1101464	1.71

Total VOC Emissions = **20.46 Ton/yr**

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.01	0.00	0.00
Fountain Solution (as supplied)	0.34	0.69	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.04
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.34	0.69	0.01	0.02	0.04

Total for All HAPs Emissions = **1.10 ton/yr**

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
305 (Nonheatset)	2433	50	767271

INK VOCS					
Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	11.0%	5%	767271	2.53
Fountain Solution (as suppfied)	0.105	11.8%	100%	767271	4.77
Manual Cleaning Solvent	0.03	100.0%	50%	767271	5.75
Automatic Cleaning Solvent	0.01	31.1%	100%	767271	1.19

Total VOC Emissions =	14.25 Ton/yr

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.01	0.00	0.00
Fountain Solution (as supplied)	0.24	0.48	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.03
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.24	0.48	0.01	0.02	0.03

Total for All HAPs Emissions =	0.76 ton/yr

Appendix A: Emissions Calculations
VOC From Printing Press Operations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

THROUGHPUT			
Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/year
306 (Nonheatset)	2646	66	1101464

INK VOCS					
Ink Name	Maxium Coverage (lbs/MMin^2)	Weight % Organics*	Flash Off %	Throughput (MMin^2/year)	Emissions (tons/year)
Lithographic Ink	1.2	11.0%	5%	1101464	3.63
Fountain Solution (as supplied)	0.105	11.8%	100%	1101464	6.85
Manual Cleaning Solvent	0.03	100.0%	50%	1101464	8.26
Automatic Cleaning Solvent	0.01	31.1%	100%	1101464	1.71

Total VOC Emissions =	20.46 Ton/yr

*VOC (Tons/year) = Maximum Coverage pounds per MMin^2 * Weight % organics (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin ^{2} per Year
VOC = Maximum Coverage pounds per MMin2 * Weight percentage organics (volatiles minus water) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

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	HAP #1: Ethylene Glycol (%)	HAP #2: Glycol Ethers (%)	HAP #3: Hydroquinone (%)	HAP #4: Cumene (%)	HAP #5: Xylene (%)
Lithographic Ink	0.00%	0.00%	0.25%	0.00%	0.00%
Fountain Solution (as supplied)	5.00%	10.00%	0.00%	0.00%	0.00%
Manual Cleaning Solvent	0.00%	0.00%	0.00%	0.30%	0.44%
Automatic Cleaning Solvent	0.00%	0.00%	0.00%	0.00%	0.00%

	HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)
Lithographic Ink	0.00	0.00	0.01	0.00	0.00
Fountain Solution (as supplied)	0.34	0.69	0.00	0.00	0.00
Manual Cleaning Solvent	0.00	0.00	0.00	0.02	0.04
Automatic Cleaning Solvent	0.00	0.00	0.00	0.00	0.00
Total (tons/year)	0.34	0.69	0.01	0.02	0.04

Total for All HAPs Emissions =	1.10 ton/yr

Appendix A: Emissions Calculations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

Heatset Mode
Emissions Before Controls:

PM*	PM_{10}*	SO_2	NOx	VOC	CO
0.23	0.92	0.07	12.07	1081.10	10.14

HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)	HAP #6: Formaldehyde (tons/year)	HAP #7: Hexane (tons/year)	TOTAL
1.62	3.24	2.50	0.12	0.17	0.01	0.22	7.88

Heatset Mode
Emissions After Controls: 97% efficiency for VOC and HAPs

PM*	PM_{10}*	SO_2	NOx	VOC	CO
0.23	0.92	0.07	12.07	32.43	10.14

HAP #1: Ethylene Glycol (tons/year)	HAP #2: Glycol Ethers (tons/year)	HAP #3: Hydroquinone (tons/year)	HAP #4: Cumene (tons/year)	HAP #5: Xylene (tons/year)	HAP #6: Formaldehyde (tons/year)	HAP #7: Hexane (tons/year)	TOTAL
0.05	0.10	0.08	0.00	0.01	0.00	0.01	0.24

Nonheatset Mode
Emissions Before Controls

PM*	PM_{10}*	SO_2	NOx	VOC	CO
0.00	0.00	0.00	0.00	97.48	0.00

Nonheatset Mode
Emissions After Controls Limited to 39.66 tons per year.

Appendix A: Emissions Calculations

Company Name: R. R. Donnelley & Sons Company
Address City IN Zip: 1009 Sloan Street, Crawfordsville, IN 47933
Permit Number: 107-24571-00052 and 107-24641-00052
Reviewer: Allen R. Davidson
Date: 6/1/2007

Summary of Energy Costs for Use of Oxidizers on Nonheatset Offset Lithographic Printing Operations at R.R. Donnelley & Sons Company

	Catalytic	Thermal (Recuperative)	Thermal (Regenerative)
VOC Loading (ton/yr)	46.05	46.05	46.05
VOC Loading (lb/hr)	10.51	10.51	10.51
Required Heat Input (MMBtu/hr)	6.566	8.833	2.316
MMBtu/hr from VOC	0.071	0.071	0.071
Operating Heat Input (MMBu/hr) with VOC	6.495	8.762	2.245
Annual Natural Gas Consumption (Th)	568,962	767,551	196,662
Natural Gas Cost $/DTh	$10.18	$10.18	$10.18
Annual Gas Cost with VOC Loading	$579,203	$781,367	$200,202
Electrical Consumption (Dryers and Oxidizers) (KW)	35.6	64	56.9
Annual Electrical Consumption (KWH)	311,856	560,640	498,444
Electrical Cost per KWH	$0.05	$0.05	$0.05
Annual Electrical Cost	$15,593	$28,032	$24,922
Total Energy Cost	$594,796	$809,399	$225,124

Methodology:
VOC Loading estimates capture efficiency from USEPA document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA 453/R-06-002, September 2006) as follows: 100% for inks, 79% for fountain solution, 40% for automatic washes, 0% for manual washes.
VOC Loading (lb/hr) = VOC Loading (ton/yr) * 2000 lb/ton / 8760 hr/yr
Operating Heat Input = Required Heat Input - MMBtu/hr from VOC
Annual Natural Gas Consumption (Th) * Natural Gas Cost $/DTh / 10 Th per DTh = Annual Gas Cost
Annual Electrical Consumption (KWH) * Electrical Cost per KWH = Annual Electrical Cost
Annual Gas Cost + Annual Electrical Cost = Total Energy Cost

Cost per Ton Analysis for Using Oxidizers on Nonheatset Offset Lithographic Printing Operations at R.R. Donnelley & Sons Company

	Catalytic	Thermal (Recuperative)	Thermal (Regenerative)
VOC Emissions Before Control (ton/year)	46.05	46.05	46.05
Control Efficiency (%)	97.0%	97.0%	97.0%
Total VOC Destroyed (ton/year)	44.67	44.67	44.67
Cost per Ton VOC Destroyed ($/ton)	$13,315.02	$18,119.09	$5,039.60

Assumptions: All presses operating at maximum capacity in nonheatset mode only, with exhaust to the oxidizers at all times.

Methodology:
VOC Emissions Before Control (ton/year) * Control Efficiency (%) = Total VOC Destroyed (ton/year)
Total VOC Destroyed (ton/year) / Total Energy Cost = Cost per Ton VOC Destroyed ($/ton)

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
Best Available Control Technology (BACT) Determination

Technical Support Document (TSD) for a Significant Source Modification
and a Significant Permit Modification to a Part 70 Operating Permit

Source Description and Location

Source Name:	**R. R. Donnelley & Sons Company**
Source Location:	**1009 Sloan Street, Crawfordsville, IN 47933-2743**
County:	**Montgomery**
SIC Code:	**2732**
Operation Permit No.:	**107-5963-00052**
Operation Permit Issuance Date:	**June 21, 2002**
Significant Source Modification No.:	**107-24571-00052**
Significant Permit Modification No.:	**107-24641-00052**
Permit Reviewer:	**Allen R. Davidson**

Background and Description of Proposed Modification

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following state BACT (Best Available Control Technology) analysis for a modification relating to the operation of a book printing and binding operation located at 1009 Sloan Street, Crawfordsville, IN 47933-2743. If approved by IDEM's Office of Air Quality (OAQ), this proposed modification would allow R. R. Donnelley & Sons Company to add six (6) new lithographic printing presses to the emission source. This BACT analysis is required by 326 IAC 8-1-6.

New Emission Units and Pollution Control Equipment

This BACT analysis includes information relating to the prior approval for the construction and operation of the following new emission units:

(a) One (1) Goss web offset lithographic printing press, identified as Press 301, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7C(S) in nonheatset mode.

(b) One (1) Timson web offset lithographic printing press, identified as Press 302, with a maximum line speed of 1700 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7D(S) in nonheatset mode.

(c) One (1) Goss web offset lithographic printing press, identified as Press 303, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7E(S) in nonheatset mode.

(d) One (1) Goss web offset lithographic printing press, identified as Press 304, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7F(S) in nonheatset mode.

(e) One (1) Goss web offset lithographic printing press, identified as Press 305, with a maximum line speed of 2433 feet per minute and a maximum printing width of 50 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7G(S) in nonheatset mode.

(f) One (1) Goss web offset lithographic printing press, identified as Press 306, with a maximum line speed of 2646 feet per minute and a maximum printing width of 66 inches, with associated in-line equipment. The press may operate in either a heatset or nonheatset mode, with VOC emissions controlled by a natural gas-fired regenerative thermal oxidizer system, exhausting to Stacks SP-5T(S), SP-7A(S) and/or SP-7B(S) in heatset mode or Vent SP-7H(S) in nonheatset mode.

(g) One (1) natural gas-fired regenerative thermal oxidizer, identified as RTO-2, rated at 3.0 million British thermal units per hour, capable of controlling Press 260, Press 261, Press 262, Press 273, Press 301, Press 302, Press 303, Press 304, Press 305 and/or Press 306, exhausting to Stack SP-7A(S).

Existing Emission Units and Pollution Control Equipment

There are no existing emission units that are included in this BACT analysis.

BACT Description

BACT is defined as “an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under the Clean Air Act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of 'best available control technology' result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act.”

According to the “Top-Down Best Available Control Technology Guidance Document" outlined in the 1990 draft U.S. EPA New Source Review Workshop Manual, BACT analyses are conducted with a "top-down" approach which consists of the following steps:

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies by control effectiveness;

(4) Evaluate control options; and

(5) Select BACT.

Also in accordance with the “Top-Down Best Available Control Technology Guidance Document" outlined in the 1990 draft U.S. EPA New Source Review Workshop Manual, BACT analyses (specifically step 4) must take into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution, thereby protecting public health and the environment. This BACT determination can be based upon, but not limited to, the following information:

(1) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;

(2) U.S. EPA and State air quality permits;

(3) Communications with control device equipment manufacturers;

(4) The EPA New Source Review website;

(5) Technical books and articles; and

(6) Guidance documents from, and communications with, state agencies.

Best Available Control Technology (BACT) Review Requirements

Pursuant to 326 IAC 8-1-6, facilities that have potential emissions of twenty-five (25) tons or more per year and are not otherwise regulated by other provisions of 326 IAC 8 or certain provisions of 326 IAC 20 shall apply BACT for volatile organic compounds (VOC). The affected emission units are Presses 301, 302, 303, 304, 305 and 306, which shall apply BACT for both heatset mode and nonheatset mode. R. R. Donnelley & Sons Company has submitted separate BACT analyses for heatset and nonheatset mode.

BACT Analysis for Heatset Mode

Based on 8760 hours of operation in nonheatset mode only, each of Presses 301, 302, 303, 304, 305 and 306 has a potential to emit above the applicability threshold of 326 IAC 8-1-6. (See Appendix A of the Technical Support Document for detailed calculations.) The details of the BACT analysis for heatset mode are as follows:

Step 1: Identify Potentially Available Control Options

Oxidizers are combustion systems that control VOC and organic HAP by combusting them to carbon dioxide (CO_2) and water. The design of an oxidation system is dependent on the pollutant concentration in the waste gas stream, type of pollutant, presence of other gases, level of oxygen, and stability of processes vented to the system. Important design factors include residence time (sufficient time for the combustion reaction to occur), temperature (a temperature high enough to ignite the waste-auxiliary fuel mixture), and turbulence (turbulent mixing of the air and waste-fuel). Of these, only temperature and oxygen can be significantly controlled after construction. Residence time and turbulence are fixed by oxidizer design.

Thermal oxidation and catalytic oxidation control devices are widely used in the printing industry to control both VOC and HAP. A catalytic oxidizer is a thermal oxidation system that uses a catalyst to lower the activation temperature of the VOCs in the exhaust stream. By use of a catalyst, the oxidation process can be completed in the range of 400 to 700°F, while uncatalyzed thermal oxidizers operate in the range of 1,200 to 1800°F.

Thermal oxidation and catalytic oxidation systems can be either recuperative or regenerative. Recuperative oxidation systems utilize heat recovery devices configured as either plate or shell and tube type metallic heat exchangers. In a recuperative oxidation system, the increase in heat content of the gases exiting the oxidation process are used to preheat the process exhaust gases prior to entering the oxidation chamber. This type of system can recover from 50 percent to 80 percent of the energy in the system. Regenerative oxidation systems are designed with a heat recovery device utilizing two or more towers of a heat exchange media that store and release heat. A valve mechanism is used to alternate the exhaust stream between the two or more towers. Energy is recovered by reversing the direction of gas flow through the towers allowing for up to 95 percent recovery of process energy.

Condensation is the separation of VOCs from an emission stream through a phase change, by increasing the system pressure or, more commonly, lowering the system temperature below the dew point of the VOC vapor. When chiller condensers are used for air pollution control, they usually operate at the pressure of the emission stream and use a refrigeration unit to obtain the temperature necessary to condense the VOCs from the emission stream.

Adsorption is a phenomenon in which attraction occurs between a carbon surface and VOC molecules, binding the VOC molecules to the carbon surface. Carbon adsorption systems, as used in the printing industry, consist of two or more adsorber vessels that contain activated carbon. Solvent laden air from the manufacturing process is passed through one or more adsorbers. The solvent from the air stream is retained or adsorbed by the carbon as it passes through the bed(s). Cleansed air is released to the atmosphere. Once the carbon in an adsorber becomes saturated with solvents, the solvent laden air is routed to an alternate adsorber and the saturated adsorber is regenerated (i.e., the adsorbed solvent is stripped from the carbon).

Step 2: Eliminate Technologically Infeasible Control Options

(a) The U.S. EPA Document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA-453/R-06-002, September 2006) identifies three (3) technologically feasible options to reduce VOC emissions from offset lithographic printing; most heatset web offset lithographic printing dryers are equipped with a thermal oxidizer, catalytic oxidizer, or chiller condenser. Therefore, OAQ has determined that all three of these options are technologically feasible for R. R. Donnelley & Sons Company.

(b) The U.S. EPA Document "Technical Support Document (TSD) for Title V Permitting of Printing Facilities" (January 2005) identifies adsorption systems as a technologically feasible options to reduce VOC emissions from offset lithographic printing. Therefore, OAQ has determined that carbon adsorption is technologically feasible for R. R. Donnelley & Sons Company.

Step 3: Rank Remaining Control Options by Control Effectiveness

(a) The U.S. EPA Document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA-453/R-06-002, September 2006) states that new thermal or catalytic oxidizers are both capable of achieving 95 percent or greater destruction efficiency. However, it states that oxidizers may not be able to achieve the stated destruction efficiency when the VOC concentration of the stream entering the control device is too low. An excerpt from the document reads as follows:

> "Oxidizers tend to have a rather constant outlet concentration around 20 ppmv as compound. As a result, an oxidizer that achieves 90 percent destruction efficiency at inlet concentrations above 200 ppmv as compound may not be able to achieve this level of destruction efficiency at inlet concentrations below 200 ppmv as compound. Similarly, an oxidizer that achieves 95 percent destruction efficiency at inlet concentrations above 400 ppmv as compound may not be able to achieve this level of destruction efficiency at inlet concentrations below 400 ppmv as compound."

(b) During an August 18, 2005 test at R. R. Donnelley & Sons Company, during which existing presses were operating in heatset mode, inlet concentration to oxidizer RTO-1 was measured at 397 ppmv as propane and the outlet concentration was measured at 5 ppmv as propane. Based on the test data, RTO-1 achieved 98.7% destruction efficiency.

(397 ppmv - 5 ppmv) / 397 ppmv = 0.987 = 98.7%

(c) Due to the variability of VOC content in the different inks, fountain solutions and washes used, the inlet concentration and the destruction efficiency will vary for different points in time. To ensure compliance in a continuous manner, a destruction efficiency requirement greater than 97% would not be technologically feasible for presses 301, 302, 303, 304, 305 and 306. This is the same BACT determination already established for the four existing presses (260, 261, 262 and 273) that use the existing thermal oxidizer RTO-1 in heatset mode.

(d) The use of a vapor condenser was determined to be less stringent than thermal or catalytic oxidation. The U.S. EPA Document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA-453/R-06-002, September 2006) states that vapor condensers are only capable of achieving 90% removal efficiency.

(e) The use of a carbon adsorption system was determined to be less stringent than thermal or catalytic oxidation or vapor condensation. The U.S. EPA Document "Survey of Control Technologies for Low Concentration Organic Vapor Gas Streams" (EPA-456/R-95-003, May 1995) states that carbon adsorbers are essentially constant outlet concentration devices, and that outlet concentrations around 50 ppmv can be routinely achieved with state-of-the-art systems. Based on the August 18, 2005 test data, only 87.4% removal efficiency can be expected for carbon adsorption:

(397 ppmv - 50 ppmv) / 397 ppmv = 0.874 = 87.4%

Step 4: Evaluate Control Options

(a) The BACT analysis submitted by R. R. Donnelley & Sons Company for heatset mode was verified by IDEM, OAQ, through the review of the various control technologies listed in the U.S. EPA BACT/RACT/LAER Clearinghouse.

(b) The table on the following page summarizes the VOC BACT determinations for emission sources with lithographic presses operating as heatset presses:

Summary of BACT Determinations for
Heatset Offset Lithographic Printing Operations
(arranged most recent permit date first)

Date	State	RBLC ID	Source	Affected Facility	BACT Determination[1]
pending	IN		R.R. Donnelley & Sons Company[8]	Heatset offset lithographic printing.	(a) Thermal oxidation, 97 % destruction efficiency. (b) Low VOC content of fountain solution and wash: 5% VOC in fountain solution. 10 mmHg vapor pressure or 2.5 lb VOC/gal blanket wash. 25 mm Hg vapor pressure or 2.5 lb VOC/gal manual cleaning solvent.
04/2005	GA	GA-0111	Williams Printing Company (an R.R. Donnelley Company) [2]	Two (2) heatset offset lithographic presses.	(a) Thermal oxidation, 97% destruction efficiency. (b) Low VOC content of fountain solution and wash: 5% VOC in fountain solution. 10 mmHg vapor pressure or 2.5 lb VOC/gal blanket wash. 25 mm Hg vapor pressure or 2.5 lb VOC/gal manual cleaning solvent.
03/2005	WI	WI-0222	Quad-Graphics (Sussex)[3]	Three (3) heatset offset lithographic presses.	(a) Thermal oxidation, 97.5% destruction efficiency. (b) 10 mmHg vapor pressure blanket wash.
10/2003	WI	WI-0221	Quad-Graphics (West Allis)[3]	Two (2) heatset offset lithographic presses.	(a) Thermal oxidation, 97.5% destruction efficiency. (b) 10 mmHg vapor pressure blanket wash.
12/2002	CA	CA-1115	Madison-Graham Colorgraphics, Inc.[4]	One (1) heatset offset lithographic printing press.	(a) Thermal oxidation, 95% destruction efficiency.
08/2002	CA	CA-1114	Quebecor World Great Western Publishing[5]	Heatset offset lithographic printing.	(a) Thermal oxidation, 98.5% destruction efficiency.
06/2002	IN		R.R. Donnelley & Sons Company[6]	Four (4) heatset offset lithographic presses.	(a) Thermal oxidation, 97 % destruction efficiency.
05/2002	IL	IL-0070	Quebecor World Chicago Division[7]	One (1) heatset offset lithographic printing press.	(a) Thermal oxidation, 97% destruction efficiency.
05/2002	IL	IL-0069	Quebecor World Effingham Division[7]	Three (3) heatset offset lithographic presses.	(a) Thermal oxidation, 97% destruction efficiency.

(1) All of the heatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse have a requirement to use thermal oxidation as an add-on control. Destruction efficiency requirements ranged from 95% to 98.5%. Several heatset offset lithographic printing presses also had limits on the VOC content of fountain solution, blanket washes and manual cleaning solvents.

(2) A Williams Printing Company facility in Georgia has a requirement to use thermal oxidation accompanied with:

(A) a limit on the use of washes having vapor pressure not greater than 10 mm Hg at 20° C, or VOC content not greater than 2.5 pounds of VOC per gallon, as applied,

(B) a limit on fountain solutions to 5% VOC content by weight, and

(C) a limit on the use of manual cleaning solvents having vapor pressure not greater than 25 mm Hg at 20° C, or VOC content not greater than 2.5 pounds of VOC per gallon, as applied.

R. R. Donnelley & Sons Company is proposing BACT which is as stringent as the Williams Printing Company BACT determination for fountain solution, blanket washes and manual cleaning solvents.

(3) Two Quad Graphics facilities in Wisconsin each have a requirement to use thermal oxidation accompanied with:

(A) a limit on the use of washes having vapor pressure not greater than 10 mm Hg at 20° C.

(B) no limits placed on fountain solution, and

(C) no limits placed on manual cleaning solvent.

R. R. Donnelley & Sons Company is proposing a BACT which is comparable to the Quad Graphics BACT determination for blanket and roller washes, and more stringent than the Quad Graphics BACT determination for fountain solutions and cleaning solvents.

(4) A Madison-Graham Colorgraphics, Inc. facility in California has a requirement to use thermal oxidation and no restrictions on washes, fountain solution, or cleaning solvent. This is less stringent than the BACT that R. R. Donnelley & Sons Company is proposing for fountain solution, blanket washes and manual cleaning solvents.

(5) A Quebecor World facility in California has a requirement to use thermal oxidation and no restrictions on washes, fountain solution, or cleaning solvent. This is less stringent than the BACT that R. R. Donnelley & Sons Company is proposing for fountain solution, blanket washes and manual cleaning solvents.

(6) Pursuant to Part 70 Operating Permit 107-5963-00052, issued on June 21, 2002, BACT for four (4) presses identified as Presses 260, 261, 262 and 273 was determined to be the use of thermal oxidation with 97% destruction efficiency when operating in heatset mode and no restrictions on washes, fountain solution, or cleaning solvent. These presses are controlled by the existing oxidizer RTO-1, rated at 1.7 million British thermal units per hour, which will constitute the first oxidizer in their proposed Regenerative Thermal Oxidizer System.

(7) Two (2) Quebecor World facilities in Illinois each have a requirement to use thermal oxidation and no restrictions on washes, fountain solution, or cleaning solvent. This is less stringent than the BACT that R. R. Donnelley & Sons Company is proposing for fountain solution, blanket washes and manual cleaning solvents.

(8) The BACT proposed by R. R. Donnelley & Sons is as stringent as the most stringent BACT determination found for heatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse. The proposed BACT consists of the following:

(A) the use of thermal oxidation,

(B) a limit on the use of blanket and roller washes having vapor pressure not greater than 10 mm Hg at 20° C, or VOC content no greater than 2.5 pounds of VOC per gallon, as applied,

(C) a limit on fountain solutions to 5% VOC content by weight, and

(D) a limit on the use of manual cleaning solvents having vapor pressure not greater than 25 mm Hg at 20° C, or VOC content not greater than 2.5 pounds of VOC per gallon, as applied.

(c) The use of the thermal or catalytic oxidization in heatset mode was found to be technologically feasible and economically feasible at 97% destruction efficiency. Since oxidization is the top option for add-on controls and R. R. Donnelley & Sons Company has agreed to implement thermal oxidization in heatset mode, no cost analysis is necessary in heatset mode.

(d) The limits proposed by R. R. Donnelley & Sons for fountain solution, blanket washes and manual cleaning solvents are as stringent as the most stringent BACT determination found for heatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse.

Step 5: Select BACT

When operating in heatset mode, the requirements of the BACT determination for Presses 301, 302, 303, 304, 305 and 306 will be as follows:

(a) Whenever any of Presses 301, 302, 303, 304, 305 and 306 is applying VOC containing materials, the exhaust from that press shall be vented through the Regenerative Thermal Oxidizer System. Other existing presses exhausting to the same oxidation control system are Presses 260, 261, 262 and 273. The oxidation control system shall have a minimum destruction efficiency of 97%. Performance testing shall be required to verify VOC control efficiency of the oxidizers in the Regenerative Thermal Oxidizer System.

(b) The use of blanket and roller washes shall have vapor pressure not greater than 10 mm Hg at 20° C, or VOC content no greater than 2.5 pounds of VOC per gallon, as applied,

(c) Fountain solutions shall be limited to 5% VOC content by weight, as applied, and

(d) The use of manual cleaning solvents shall have vapor pressures not greater than 25 mm Hg at 20° C, or VOC content not greater than 2.5 pounds of VOC per gallon, as applied.

Compliance with these requirements satisfies the best available control technology (BACT) requirement in 326 IAC 8-1-6 for nonheatset mode.

BACT Analysis for Nonheatset Mode

Based on 8760 hours of operation in nonheatset mode only, each of these presses has a potential to emit below the applicability threshold of 326 IAC 8-1-6. Nonetheless, 326 IAC 8-1-6 will also apply to the presses when operating in the nonheatset mode due to the potential emissions of the heatset mode. The details of the BACT analysis for nonheatset mode are as follows:

Step 1: Identify Potentially Available Control Options

See the BACT analysis for heatset mode, "Step 1: Identify Potentially Available Control Options", for potentially available VOC control options during nonheatset mode.

Step 2: Eliminate Technologically Infeasible Control Options

(a) The U.S. EPA Document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA-453/R-06-002, September 2006) identifies three (3) technologically feasible options to reduce VOC emissions from offset lithographic printing; most heatset web offset lithographic printing dryers are equipped with a thermal oxidizer, catalytic oxidizer, or chiller condenser. However, the guidance document does not recommend any add-on controls for nonheatset (also known as coldset) offset lithographic printing. An excerpt from the document reads as follows:

> "The limited VOC emissions that occur from sheet-fed and coldset web offset lithographic inks are diffuse and spread over a large area. These emissions are not amenable to add-on control. This is in contrast to the emissions associated with heatset offset web lithographic inks and heatset web letterpress inks, as the petroleum oils in those inks volatilize in a dryer and are more amenable to add-on control because they are emitted in a more concentrated form from a discrete source."

(b) The use of a vapor condenser in nonheatset mode was found to be technologically infeasible in nonheatset mode. The low concentrations of VOC in the exhaust gas stream in nonheatset mode are not sufficient to make vapor condensation practical.

(c) The use of carbon adsorption in nonheatset mode was found to be technologically infeasible in nonheatset mode. The concentrations of VOC in the exhaust gas stream in nonheatset mode are too low for effective carbon adsorption.

Step 3: Rank Remaining Control Options by Control Effectiveness

The use of either a thermal or catalytic oxidizer is estimated by the U.S. EPA Document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA-453/R-06-002, September 2006) at 95 percent or greater destruction efficiency. This estimate is supported by existing requirements contained in Part 70 permit 107-5963-00052 which require 97% destruction efficiency for oxidizer RTO-1 when operating in heatset mode.

Step 4: Evaluate Control Options

(a) The BACT analysis submitted by R. R. Donnelley & Sons Company for nonheatset mode was verified by IDEM, OAQ, through the review of the various control technologies listed in the U.S. EPA BACT/RACT/LAER Clearinghouse.

(b) The table on the following page summarizes the VOC BACT determinations for emission sources with lithographic presses operating as nonheatset presses:

Summary of BACT Determinations for
Nonheatset Offset Lithographic Printing Operations
(arranged most recent permit date first)

Date	State	RBLC ID	Source	Affected Facility	BACT Determination[1]
pending	IN		R.R. Donnelley & Sons Company[7]	Offset lithographic printing: non-heatset	(a) No add-on controls. (b) Low VOC content of inks, fountain solution and wash: 2.0% VOC in fountain solution. 10 mmHg vapor pressure or 2.5 lb VOC/gal blanket and roller washes. (c) 2.5 lb VOC/gal in inks.
04/05	GA	GA-0111	Williams Printing Company (an R.R. Donnelley Company) [2]	Coldset sheetfed offset lithographic presses	(a) No add-on controls. (b) Low VOC content of inks, fountain solution and wash: 5% VOC in fountain solution. 10 mmHg composite VOC vapor pressure or 2.5 lb VOC/gal blanket wash. 25 mm Hg composite VOC vapor pressure or 2.5 lb VOC/gal manual cleaning solvent. (c) 2.5 lb VOC/gal inks, coatings and varnishes. (LAER)
01/03	CA	CA-0992	Sierra Office Systems [3]	Lithographic printing press and infrared dryer	(a) No add-on controls. (b) Rule compliant cleaning and inks and 8% VOC in fountain solution. (LAER)
12/00	CA	CA-1063	Los Angeles Times Communications, LLC [4]	Lithographic offset printing: non-heatset.	(a) No add-on controls. (b) VOC of fountain solution not to exceed 0.17 lb/gal. (c) Ink VOC < 300 g/l.
12/00	CA	CA-1064	Melin Enterprises, Direct Color [5]	Lithographic offset printing: non-heatset.	(a) No add-on controls. (b) VOC of fountain solution not to exceed 0.2 lb/gal.
12/96	CA	CA-0806	Pacific Southwest Container [6]	Offset lithographic non-heatset press.	(a) No add-on controls. (b) Use of materials with the following VOC contents: For high end graphics: Less than 30% VOC by weight for inks (less water and exempt compounds) and less than 15% by volume for fountain solutions.

(1) There were no add-on control requirements found for any of the nonheatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse.

(2) A Williams Printing Company facility in Georgia has a limit on the use of washes having vapor pressure not greater than 10 mm Hg at 20 degrees C, or VOC content not greater than 2.5 pounds of VOC per gallon, as applied. This is the most stringent limit found for washes for nonheatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse.

R. R. Donnelley & Sons Company is proposing the use of blanket and roller washes having vapor pressure not greater than 10 mm Hg at 20°C, or VOC content no greater than 2.5 pounds of VOC per gallon, as applied, which is comparable with the most stringent BACT found for nonheatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse.

(3) A press at a Sierra Office Systems facility in California has a limit of 8% VOC content for fountain solution, by weight. This is less stringent than a press at a Los Angeles Times Communications, LLC facility in California, and also less stringent than the BACT that R. R. Donnelley & Sons Company is proposing.

(4) A press at a Los Angeles Times Communications, LLC facility in California has a limit of 0.17 lb VOC per gallon for fountain solution. This is the most stringent limit found for fountain solutions for nonheatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse. (It equates to a limit of 2% VOC for fountain solutions, as applied.)

R. R. Donnelley & Sons Company is proposing the use of fountain solution with no greater than 2.0% VOC content by weight, as applied, which is comparable with the most stringent BACT found in the BACT/RACT/LAER Clearinghouse.

(5) A press at a Melin Enterprises facility in California has a limit of 0.2 lb VOC per gallon for fountain solution. This is less stringent than a press at a Los Angeles Times Communications, LLC facility in California, and also less stringent than the BACT that R. R. Donnelley & Sons Company is proposing.

(6) A press at a Pacific Southwest Container facility in California has a limit of 30% VOC content for inks, by weight, for high quality graphics similar to that performed by R. R. Donnelley & Sons Company. This is less stringent than a press at a Williams Printing Company facility in Georgia, and also less stringent than the BACT that R. R. Donnelley & Sons Company is proposing.

R. R. Donnelley & Sons Company is proposing the use of nonheatset inks with no greater than 2.5 pounds of VOC per gallon, as applied, which is comparable with the most stringent BACT found in the BACT/RACT/LAER Clearinghouse.

(7) The BACT proposed by R. R. Donnelley & Sons for nonheatset operation is as stringent as the most stringent BACT determinations found for nonheatset offset lithographic printing presses in the USEPA BACT/RACT/LAER Clearinghouse. The proposed BACT consists of the following:

(A) the use of inks with no greater than 2.5 pounds of VOC per gallon, as applied;

(B) the use of fountain solution with no greater than 2.0% VOC content by weight, as applied; and

(C) the use of blanket and roller washes having:

(i) vapor pressure not greater than 10 mm Hg at 20°C, or

(ii) no greater than 2.5 pounds of VOC per gallon, as applied.

This is the same BACT determination which is being proposed for four existing presses for nonheatset mode at R. R. Donnelley & Sons (Presses 260, 261, 262 and 273) under Significant Permit Modification 107-23347-00052, which is pending.

(c) The following table summarizes the energy costs for using thermal or catalytic oxidizers to control VOC emissions during nonheatset operations at R. R. Donnelley & Sons Company:

Summary of Energy Costs for Use of Oxidizers on Nonheatset Offset Lithographic Printing Operations at R.R. Donnelley & Sons Company

Type of Control Technology	Catalytic	Thermal (Recuperative)	Thermal (Regenerative)
VOC Loading (ton/yr)	46.05	46.05	46.05
VOC Loading (lb/hr)	10.51	10.51	10.51
Required Heat Input (MMBtu/hr)	6.566	8.833	2.316
MMBtu/hr from VOC	0.071	0.071	0.071
Operating Heat Input (MMBu/hr) with VOC Loading	6.495	8.762	2.245
Annual Natural Gas Consumption (Th)	568,962	767,551	196,662
Natural Gas Cost $/DTh	$10.18	$10.18	$10.18
Annual Gas Cost with VOC Loading	$579,203	$781,367	$200,202
Electrical Consumption (Dryers and Oxidizers) (KW)	35.6	64	56.9
Annual Electrical Consumption (KWH)	311,856	560,640	498,444
Electrical Cost per KWH	$0.05	$0.05	$0.05
Annual Electrical Cost	$15,593	$28,032	$24,922
Total Energy Cost	$594,796	$809,399	$225,124

Methodology:
VOC Loading estimates capture efficiency from USEPA document "Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing" (EPA 453/R-06-002, September 2006) as follows: 100% for inks, 79% for fountain solution, 40% for automatic washes, 0% for manual washes.
VOC Loading (lb/hr) = VOC Loading (ton/yr) * 2000 lb/ton / 8760 hr/yr
Operating Heat Input = Required Heat Input - MMBtu/hr from VOC
Annual Natural Gas Consumption (Th) * Natural Gas Cost $/DTh / 10 Th per DTh = Annual Gas Cost
Annual Electrical Consumption (KWH) * Electrical Cost per KWH = Annual Electrical Cost
Annual Gas Cost + Annual Electrical Cost = Total Energy Cost

(b) The following table summarizes the costs per ton VOC removal for using thermal or catalytic oxidizers to control VOC emissions during nonheatset operations at R. R. Donnelley & Sons Company:

Cost per Ton Analysis for Using Oxidizers on Nonheatset Offset Lithographic Printing Operations at R.R. Donnelley & Sons Company

Type of Control Technology	Catalytic	Thermal (Recuperative)	Thermal (Regenerative)
VOC Emissions Before Control (ton/year)	46.05	46.05	46.05
Control Efficiency (%)	97.0%	97.0%	97.0%
Total VOC Destroyed (ton/year)	44.67	44.67	44.67
Cost per Ton VOC Destroyed ($/ton)	$13,315.02	$18,119.09	$5,039.60

Assumptions: All presses operating at maximum capacity in nonheatset mode only, with exhaust to the oxidizers at all times.

Methodology:
VOC Emissions Before Control (ton/year) * Control Efficiency (%) = Total VOC Destroyed (ton/year)
Total VOC Destroyed (ton/year) / Total Energy Cost = Cost per Ton VOC Destroyed ($/ton)

(b) The nonheatset process must use inks and solutions with lower VOC content than in heatset mode; also, the absence of drying allows more VOC to be retained in the paper. There are inherently fewer VOC emissions in nonheatset operation, resulting in a significantly higher cost per ton to use add-on controls compared to heatset operation.

(1) The use of a catalytic oxidization system in nonheatset mode was found to be technologically feasible, but economically infeasible. The cost of using catalytic oxidation to control emissions during nonheatset operation is estimated at more than $13,300 per ton.

(2) The use of recuperative thermal oxidization system in nonheatset mode was found to be technologically feasible, but economically infeasible. The cost of using recuperative thermal oxidation to control emissions during nonheatset operation is estimated at more than $18,100 per ton.

(2) The use of regenerative thermal oxidization system in nonheatset mode was found to be technologically feasible, but economically infeasible. The cost of using regenerative thermal oxidation to control emissions during nonheatset operation is estimated at more than $5,000 per ton.

Step 5: Select BACT

When operating in nonheatset mode, the requirements of the BACT determination for Presses 301, 302, 303, 304, 305 and 306 will be as follows:

(a) The inks used by Presses 301, 302, 303, 304, 305 and 306 shall not contain greater than 2.5 pounds of VOC per gallon, as applied;

(b) The fountain solution used by Presses 301, 302, 303, 304, 305 and 306 shall not contain greater than 2.0% VOC content by weight, as applied; and

(c) The solvents used for blanket and roller washes by Presses 301, 302, 303, 304, 305 and 306 shall comply with at least one of the following:

(1) The solvent shall not have a vapor pressure greater than 10 mm Hg at 20 degrees C, or

(2) The solvent shall not contain greater than 2.5 pounds of VOC per gallon, as applied.

Compliance with these requirements satisfies the best available control technology (BACT) requirement in 326 IAC 8-1-6 for nonheatset mode.