WISCONSIN
DEPT. OF NATURAL RESOURCES

AIR POLLUTION CONTROL GENERAL CONSTRUCTION PERMIT (GCP) FOR DIGITAL PRINTING UNITS

In accordance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to 499, Wis. Adm. Code, the owner/operator identified below is hereby granted coverage under this permit and is authorized to construct and operate digital printing units within a direct stationary source in conformity with the conditions herein until such time that the units are granted coverage under an Operation Permit or a General Operation Permit.

FACILITY IDENTIFICATION NUMBER (FID) [XXXXXXXXX]

PERMIT NUMBER. This is a General Construction Permit. This General Construction Permit is not issued to an individual facility. This General Construction Permit will be issued once for use by sources that demonstrate that the source qualifies for coverage under this General Construction Permit. Therefore there is no source specific FID or Permit Number for this General Construction Permit. Instead, this permit will be released for coverage to an individual applicant as Permit Number

XXXXXXXXX-GCP08n, where the nine letters of X represent the Facility Identification Number (FID) for the applicant and -08n represents the Digital Printing Synthetic Minor Source General Construction Permit issued in the State of Wisconsin for Major Facilities.

STACK NUMBER(S): <As provided by the permit application>

EMISSIONS UNIT NUMBER(S): <As provided by the permit application>

Facility Name: <As provided by permit application>

Street Address:

Responsible Official, & Title:

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in this permit. The authority for the permit holder to construct, modify, replace and/or reconstruct any printing unit covered under this general construction permit expires eighteen (18) months from the date this permit it is released to the facility. This approved period to construct, modify, replace and/or reconstruct may be extended for up to 18 months upon request for cause, prior to expiration, unless otherwise specified by this general construction permit. The conditions of this general construction permit are permanent and may only be revised through revocation of coverage under the general construction permit, through revision of the general construction permit, or through issuance and release for coverage of a new general construction permit.

Dated at Madison, Wisconsin, June 15, 2007

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By _____
Jeffrey C. Hanson
Permits and Stationary Source Modeling Section Chief

Applicability

This permit applies to digital printing units and associated operations (i.e. "the project") identified on the cover page to this permit and that meet the following criteria:

- The permittee elects to restrict (e.g. "cap") actual emissions from the printing units to below 40 tons of volatile organic compounds per year.
- The facility, prior to construction, is classified as a major source under chs. NR 405 and NR 408, Wis. Adm. Code.
- The facility will not be required, as a result of the proposed project, to obtain a construction permit for one or more new or existing emissions units at the facility, including printing units, under ch. NR 405 or 408.
- The printing units will be located at a facility that will not have the potential-to-emit Federal Hazardous Air Pollutants (HAPs) greater than 10 TPY for each individual and individual category of Federal HAP or greater than 25 TPY for all Federal HAPs combined.

A "Federal Hazardous Air Pollutant (HAP)" shall be defined as any pollutant that is listed as a hazardous air pollutant under section 112 (b) of the Clean Air Act (42 USC 7412 (b)).

"Associated operations" shall be defined as operations that, in addition to operation of a printing unit to print on a substrate during production, are necessary in order to create final printed products or to maintain the ability of a printing unit to operate.

Previously Established Emission Limitations

Previously Issued Construction Permits

This construction permit may be used to provide coverage of groups of sources (e.g. digital printing units) that are in the same source category (e.g. digital printing) and that have been permitted under a construction permit which contained restrictions on potential-to-emit VOCs based on a five-year window netting analysis under ch. NR 408, Wis. Adm. Code. In these cases, a separate general construction permit must be used for each group of sources, and the original construction permit restrictions on PTE from each group of sources shall still apply, in addition to any restrictions on PTE contained in this construction permit.

Previously Issued ConstructionPermits

To qualify for coverage under this general construction permit, the permittee shall submit an application to the Department for each existing permit that contains conditions that apply to one or more sources covered under this general construction permit. These applications shall request the Department to revise the variant conditions in those permits to be consistent with the conditions in this general construction permit.

Source Elections

The digital printing units and associated operations covered by this permit are subject to s. NR 424.03, Wis. Adm. Code, and the Department considers each press (including its associated operations) to be part of a separate process line. Under s. NR 424.03(2)(b) and (c), Wis. Adm. Code, 85% emissions control of organic compound emissions is required, or, where 85% control is demonstrated to be technologically infeasible, the permittee must use the latest available control techniques (LACT) and operation practices demonstrating best current technology, as approved by the Department [s. NR 424.03(2)(c), Wis. Adm. Code]. As an alternative to the 85% control requirement, the owner or operator can elect to meet the LACT conditions defined by the Department in this permit. By submitting an application for this permit, the owner or operator is informing the Department of this election, and the Department is approving the request by granting coverage under this permit.

Facilities and associated industrial cleaning operations for which coverage under this General Construction Permit is granted are potentially subject to the requirements of s. NR 423.035, Wis. Adm. Code, the Industrial Cleaning Operations Rule. If applicable, requirements of this regulation will be stated in the operation permit that covers industrial solvent cleaning equipment and equipment not granted coverage under this permit that may exist at the facility.

PART I

A. OPERATIONAL REQUIREMENTS

(1) For each type of digital printing unit the permittee may not cause, allow, or permit the total emissions from all digital printing units of that type, including associated operations[1], to exceed 20,000 pounds of volatile organic compounds during any period of twelve consecutive calendar months. "Type" shall be defined by the distinct category of digital printing output technology (e.g. application method) that was specified for each digital printing unit in the permittee's general construction permit application.
[ss. NR 424.03(2)(c), and NR 406.16(1)(d), Wis. Adm. Code]

(2) In order to receive credit for retention of VOC-containing materials in shop towels, wipes, pads and other media used for manual cleaning operations, the permittee shall handle the soiled media in a manner that minimizes solvent evaporation and spills and shall meet one or more of the following requirements to receive corresponding credit:

(a) 50% VOC retention (50% emitted as VOCs) may be applied for a cleaning solution if it contains less than 30% VOC by weight or a has a VOC composite vapor pressure of no more than 10 mm Hg at 68°F, or

(b) 40% VOC retention (60% emitted as VOCs) may be applied for a cleaning solution if its VOC composite vapor pressure is greater than 10 mm Hg but less than 25 mm Hg at 68°F, or contains more than 30% VOC by weight.
[s. 285.65(7), Wis. Stats.]

(3) No person may cause, allow or permit organic compounds to be used or handled without using good operating practices and taking reasonable precautions to prevent the spillage, escape or emission of organic compounds (including VOCs), solvents or mixtures. Such precautions shall include, but are not limited to,

(a) use of caution to prevent spillage or leakage when filling tanks

(b) use of caution when performing the disposal of any VOC containing materials. The permittee shall perform the disposal by a method approved by the Department, such as incineration, recovery for reuse, or transfer in closed containers to an acceptable disposal facility

(c) keep each VOC-containing material in a closed container, except when in use at the facility, when handled during solvent recovery or during transfer to another container, or when filling, draining, or performing cleanup operations. VOC-containing materials include but are not limited to as-received materials, as-applied materials, shop towels, wipes, pads and other media used for manual cleaning operations

(d) use measures such as written plans, work instructions, training documents, signage, or verbal instructions to establish operating practices that prevent the spillage, escape or emission of organic compounds from the handling, transfer, storage and disposal of VOC-containing materials.
[ss. NR 419.03(2), NR 419.04(2), and NR 439.04(1)(d), Wis. Adm. Code, and s. 285.65(7), Wis. Stats.]

(4) The permittee may not cause, allow, or permit the total actual emissions of VOCs from the digital printing units, and their associated operations[2], covered under this permit to exceed 39.9 tons of volatile organic compounds per year, calculated[3] monthly as the cumulative total over the most recent period of twelve consecutive calendar months. [s. 285.65(7), Wis. Stats.]

---

[1] "Associated operations" means operations that, in addition to operation of a digital printing unit to print on a substrate during production, are necessary in order to create final printed products or to maintain the ability of a digital printing unit to operate.
[2] "Associated operations" means operations that, in addition to operation of a printing unit to print on a substrate during production, are necessary in order to create final printed products or to maintain the ability of a printing unit to operate.
[3] This permit implements the USEPA's formula-based approach for demonstrating compliance with this restriction on potential-to-emit. See the USEPA's Technical Support Document, section 6.3.1, at http://www.epa.gov/ttn/emc/cam/tsd.pdf

B. RECORDKEEPING REQUIREMENTS

(1) If a material received from an off-site supplier is intended for use by one or more digital printing units or by an associated operation and if the material contains greater than 1% VOC by weight, then at or before the time of application or use the permittee shall

(a) identify and record the material or the class of similar materials to which it belongs, using the name or code on the supplier's specifications or another name or identification code

(b) determine and record by specification or by calculation:

(i) the VOC content, in pounds of VOC per gallon, of the material or class, or

(ii) the density, in pounds per gallon, and the percent VOC content by weight of the material or class.

(c) when determining the VOC content or other property for each material in a class of similar materials use the specifications for the material which has the highest VOC content in that class.

(d) to determine VOC content or density, the permittee may use one or more of the following specification documents: testing results, the Material Safety Data Sheet from the supplier or manufacturer, general chemical literature, or a compositional analysis (formulation) of the material. When a document states a range of values for a specification, the permittee shall use the value that results in the worst-case VOC content. The permittee may elect to use a VOC content of 100% for materials lacking documentation.

(e) record the calculations, supplier formulation, and other data used to determine the VOC content of each material and class of similar materials.

[s. NR 406.16(1)(d), Wis. Adm. Code]

(2) Within 15 business days after the end of each calendar month the permittee shall:

(a) determine and record the sum total amount in units of gallons, liters, or pounds, of each VOC-containing material (or of the class of similar materials representing the material) that was used by all digital printing units, including their associated operations, of the type covered under this permit during the previous calendar month, according one of the following usage monitoring methods:

(i) monitor the material's (or class's) inventory, consumption, or purchase data such that the data is segregated by each type of digital printing unit's actual use, and then calculate the material usage for each type using separate material balances, excluding from the totals any amount of material returned to inventory or recovered as waste and that was not already excluded from the totals for other operations at the facility (e.g. double-counted), or

(ii) allocate the amount of material (or of its class) used to each type of digital printing unit using an alternative method submitted with the permit application and approved by the Department.

(iii) The permittee may change the monitoring method after coverage is granted under this permit after gaining Department approval of that method. If the Department does not act within 60 days of a receipt of a request to use an alternative method, the method shall be deemed approved.

(b) for each VOC-containing material used by the type of digital printing units, including associated operations, covered under this permit calculate and record:

(i) the amount, in gallons (converted from Liters, if necessary) or pounds, of the material (or of its class of similar materials) used by the type or its associated operations during the previous calendar month, multiplied by

(ii) the VOC content, in pounds per gallon or weight percent, as appropriate for consistent calculation units, of the material (or of its class of similar materials), multiplied by

(iii) the percentage, divided by 100%, of the material's VOCs assumed to be emitted, according to the retention credit that the material qualifies for under I.A.(2), if any. If the material does not qualify for a retention credit, the permittee shall assume that 100% of the material's VOCs is emitted.

(iv) calculate and record the total VOC emissions, in pounds, during the previous calendar month from the type of digital printing unit covered under this permit by adding together the VOC emissions determined under (i) through (iii) for all the materials used by that type and its associated operations during the previous calendar month.

(v) calculate and record the total VOC emissions, in pounds per twelve-month-period, from the type of digital printing unit covered under this permit by adding together the VOC emissions determined under (iv) for each month in the previous 12 consecutive calendar months.

(c) record all calculations used to determine the quantities of material and VOC emissions determined and recorded under (b)(i) through (b)(v).

[s. NR 406.16(1)(d), Wis. Adm. Code]

(3) Within 15 days after the end of each calendar month the permittee shall calculate and record the total VOC emissions, in tons, during the most recent 12 consecutive calendar months from all digital printing units and associated operations covered under this permit.

[ss. NR 407.09(4)(a)1. and (4)(a)3.b., Wis. Adm. Code]

(4) If the permittee claims credit for retention under I.A.(2)(a) or (b), then the permittee shall determine and record the VOC composite vapor pressure, as applied, of each material (e.g. solvent) used for manual cleaning operations. To determine this quantity, the permittee may use the VOC composite vapor pressure reported on the material's MSDS or other supplier specification document. The permittee may derive VOC composite vapor pressure mathematically by using the following formula with data for the vapor pressure of each component in the material, as reported on an MSDS or in another supplier specification document that reports vapor pressure test results:

$$P_c = \sum_{i=1}^{n} \left[\frac{\dfrac{W_i P_i}{M_i}}{\dfrac{W_w}{M_w} + \dfrac{W_e}{M_e} + \sum_{i=1}^{n} \left(\dfrac{W_i}{M_i} \right)} \right]$$

Where:

W_i =Weight of the "i"th VOC compound, in grams

W_w =Weight of water, in grams

W_e =Weight of exempt compound (includes all non-VOC compounds), in grams

M_i =Molecular weight of the "i"th VOC compound, in g/g-mole

M_w =Molecular weight of water, in g/g-mole

M_e =Molecular weight of exempt compound (includes all non-VOC compounds), in g/g-mole

P_c =VOC composite partial pressure at 20°C, in mm Hg

P_i =Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg

[s. NR 406.16(1)(d), Wis. Adm. Code]

C. METHODS FOR DETERMINING VOC CONTENTS

(1) Whenever the Department requires compliance testing of an ink or coating that is not thin-film-radiation-cured, in order to determine the VOC content or density of the material, the permittee shall use U.S. EPA Method 24 in 40 CFR part 60, Appendix A, to determine organic solvent content, unless the Department has approved the permittee to use an alternative method. For thin-film-radiation-cured coatings and inks the permittee may determine VOC content by specification or calculation, using a document allowed under I.B.(1)(b).

[s. NR 439.06(3)(b), Wis. Adm. Code]

(2) Whenever compliance testing of a clean-up solvent, thinner, or other material (except an ink or coating) is required in order to determine the VOC content or density of the material, the permittee shall use a method to determine organic solvent content and density that has been approved by the Department. The permittee may use U.S. EPA Method 24 in 40 CFR part 60, Appendix A, to determine VOC content and density of these materials. [s. NR 439.06(3)(b), Wis. Adm. Code]

(3) Whenever compliance testing is required in order to determine the VOC composite vapor pressure of a material or to determine the vapor pressure of each component in a material, the permittee shall use method ASTM D2879-97 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.10(39m), unless the Department has approved the permittee to use an alternative method. [s. NR 439.06(3)(a), Wis. Adm. Code]

D. HAZARDOUS AIR POLLUTANT REQUIREMENTS

(1) The permittee may emit to ambient air an hazardous air contaminant that is listed under Table A of chapter NR 445, Wis. Adm. Code, and that does not have a control requirement listed under column (i) of Table A, only if the facility emissions of the contaminant meet at least one of the following conditions (a), (b), (c), or (d):

- (a) the contaminant is released to ambient air by general building ventilation sources and all applicable thresholds in column (h) of Table A for the contaminant are stated either in 1-hour or 24-hour average time periods
- (b) the contaminant is released to ambient air by general building ventilation sources and all of the following requirements are met for the contaminant:
  (i) at least one applicable threshold in column (h) of Table A for the contaminant is stated in terms of an annual time period
  (ii) the contaminant has a threshold limit value established by the American Conference of Governmental Industrial Hygienists, in the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices for 2000
  (iii) the permittee demonstrates to the department that it is in compliance with applicable occupational safety and health administration requirements
- (c) the contaminant is released in quantities that do not exceed the appropriate threshold level in columns (c) to (f) of Table A, provided that the stack that vents the emissions meets the following criteria:
  (i) the emissions are from an unobstructed discharge point and
  (ii) the stack is oriented in an upward direction within 10 degrees of vertical
- (d) the owner or operator limits emissions so as not to cause an ambient air quality concentration off property that exceeds column (g) of Table A, where applicable

[ss. NR 445.07(1), NR 445.07(5)(d)1, Wis. Adm. Code]

(2) The permittee may emit to ambient air a hazardous air contaminant that is listed under Table A of chapter NR 445, Wis. Adm. Code, that does have a control requirement listed under column (i) of Table A, only if the contaminant has a unit risk factor established by either the USEPA or the California Air Resources Board and if the facility emissions of the contaminant meet at least one of the following conditions (a) or (b), where inhalation impact is defined under s. NR 445.08(2)(c), Wis. Adm. Code:

- (a) the inhalation impact off property from each individual contaminant with a control requirement in column (i) does not exceed 1 in 10^{-6} (1 in a million), or
- (b) the inhalation impact from all contaminants with a control requirement in column (i) does not exceed 1 in 10^{-5} (1 in 100,000)

[ss. NR 445.07(1), NR 445.08(2)(c), Wis. Adm. Code]

(3) The permittee may not cause, allow, or permit from the facility at which the printing unit(s) covered by this general permit are located the emission of Federal Hazardous Air Pollutants (HAPs) greater than 10 tons per year for each individual and individual category of Federal HAP or greater than 25 tons per year for all Federal HAPs combined. Federal HAP emissions shall be calculated no less frequently than monthly as the cumulative total over the most recent period of twelve consecutive calendar months. [s. 285.65(7), Wis. Stats.]

E. REPORTING REQUIREMENTS

(1) Unless otherwise specified in an operation permit covering the facility or in a construction permit, the permittee shall submit an annual certification of compliance with the terms and conditions of this permit, along with an annual monitoring summary report containing the monitoring results required in this permit, to the Wisconsin Department of Natural Resources, Bureau of Air Management (AM/7), Compliance Team Leader, P.O. Box 7921, Madison, WI 53707-7921, or to the attention of Air Program Compliance at the address of the Department's Service Center that is located nearest to the facility. Compliance certifications and monitoring summary reports made to the Department shall cover all equipment covered by air pollution control operation permits, including those granted coverage under this general construction permit.

(a) The time period to be addressed by the report is the January 1 to December 31 period which precedes the report, or the time period for the report required by an existing permit, if any. However, the report does not need to address any calendar month during which the permittee was not subject to this permit for at least part of the month.
(b) The reports shall be submitted to the Service Center Office (or Central Office) within 60 days after the end of each reporting period.
(c) The information included in the reports shall comply with the requirements of Part II Section N of this permit, including but not limited to the information required under s. NR 439.03(8), Wis. Adm. Code.
(d) Each report shall be certified by the responsible official as to the truth, accuracy and completeness of the report.
(e) The methods used to determine the permittee's compliance status shall be the same methods which are required under s. NR 407.09(1)(c)1.

[ss. NR 439.03(1)(c), NR 439.03(8), and NR 439.03(10), Wis. Adm. Code]

(2) All records required under this construction permit shall be retained and maintained for at least five (5) years and shall be made available to Department personnel upon request during normal business hours. [s. NR 439.04, and s. NR 439.05, Wis. Adm. Code]