

Compliance Certification for Lithographic Printing Facilities

Background

On August 1, 2009, the Wisconsin Department of Natural Resources' (DNR) new reasonably available control technology (RACT) rules for lithographic printing operations became effective. The rule applies to printing facilities located in an eight county area of Southeast Wisconsin, which include: Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties.

The rule is significant because it targets small printing operations. The reason for the focus on Southeast Wisconsin is because of the persistent air pollution problems and continuing noncompliance with the ozone standard. Ozone is one of the six air pollutants regulated by the Federal EPA and areas that exceed the acceptable level or concentration of ozone are classified as nonattainment and are required to develop and implement air pollution control regulations to reduce the ozone concentration, which is produced by VOC reacting with nitrogen oxides in the presence of sunlight.

For all sheetfed, nonheatset web, and heatset web printing operations, the rule sets new limits for the use volatile organic compounds (VOCs) in fountain solutions and cleaning solvents. For heatset presses, the rule requires facilities to install and use an add-on control device for certain presses to reduce the emissions.

Applicability Questions

Does this apply to you? If you can answer No to either of the applicability questions, then you are not required to submit this certification.

1. Check "yes" if your facility is located in one of the listed counties.
2. Calculate your actual VOC emissions from all lithographic printing presses, including related lithographic cleaning activities and fountain solution use at the facility, before consideration of controls, to determine whether they equal or exceed 3 tons on a 12 consecutive month rolling basis.

Before calculating your emissions, you may use the following usage thresholds to gauge whether you will be below the applicability level:

Type of Offset Lithographic Printing Operation	12-Month Rolling Material Use Threshold
Sheet-fed	768 gallons of cleaning solvent and fountain solution additives
Non-heatset Web	768 gallons of cleaning solvent and fountain solution additives
Heatset Web	5400 pounds of ink, cleaning solvent, and fountain solution additives

If you are close to the thresholds shown, you may wish to do more accurate calculations to see whether you can still be exempt from this rule.

Consider the following in your calculations of VOC emissions:

- VOC emissions from the cleaning of electronic components of a lithographic printing press, pre-press and post-press cleaning operations, the use of janitorial supplies used to clean around a lithographic printing press and solvents used in cold cleaners are excluded.
- A 20% VOC retention factor for heatset inks printed on absorptive substrates.
- A 95% VOC retention factor for sheet-fed and non-heatset web inks printed on absorptive substrates.

- A 50% VOC retention factor for cleaning solution in shop towels where the composite partial vapor pressure of the VOC in the cleaning solution is less than 10 mm of Hg at 20°C (68°F) and the cleaning solution and contaminated shop towels are kept in closed containers.
- A 100% VOC capture efficiency for inks. [Capture efficiency testing for heatset dryers is not required if it is demonstrated that pressure in the dryer is negative relative to the surrounding press room and the airflow is into the dryer.]
- A 70% VOC capture efficiency for fountain solutions containing alcohol substitutes.
- A 40% VOC capture efficiency for automatic blanket or roller wash where the VOC composite partial vapor pressure of the blanket or roller wash is less than 10 mm of Hg at 20°C (68°F).

What is meant by a rolling twelve-month period?

A rolling twelve-month period means the total of the VOC emissions for the current month plus the VOC emissions of the preceding eleven months. Total VOC emissions must be determined on an on-going monthly basis.

For assistance with calculations, review worksheets found in the Wisconsin Printers Environmental Compliance Workbook, starting on page CI-30 in the Cyan Ink Room Appendix.

<http://dnr.wi.gov/topic/SmallBusiness/documents/ERP/printing/ERPCyanInkRoom.pdf>

If you are below the thresholds in the table or your calculated VOC emissions are below 3 tons over a 12 month rolling period, then you may check NO to question #2.

If you have answered "Yes" to both applicability questions, proceed with the certification checklist questions.

What do I need to do if the rule does not apply to me?

Printers that do not have to follow the new requirements are required to keep material use or emission records to show that the rule does not apply to them.

Compliance Checklist and Certification

The owner or operator of an existing heatset web lithographic printing press shall submit to the department, no later than July 1, 2010, written certification that the press is in compliance with the applicable requirements of the "Emission Limitations-dryer exhaust", "Emission Limitations-fountain solution", "Emission Limitations-blanket and roller wash", "Work Practices" and "Temperature Monitoring" that apply to their operation.

Non-web heatset lithographic presses are not required to certify compliance, but should still have records available to demonstrate compliance upon request.

The checklist questions are intended to capture whether you are meeting the following requirements and/or qualify for certain exemptions. All printers should use the checklist to ensure they have met all the new requirements.

What are the requirements for heatset web offset presses?

The use of pollution control devices such as an oxidizer is required for any heatset press with VOC emissions prior to controls of greater than twenty-five tons per year. The pollution control device must remove or destroy at least 90% by weight of the VOC that is being ducted to it. For pollution control devices or oxidizers, defined as those installed after May 1, 2010, the required removal or destruction efficiency increases to 95% by weight of the VOC in the dryer exhaust.

DNR has indicated that with regard to use of the phrase "first installed" in the rule, the first installation date for a control device does not change if the device is later moved to a new location. For example, if a brand new control device first installed in 1992 is moved to a new location in 1998, the first installation date is still 1992.

In addition, the dryer air pressure must be such that it is negative to the surrounding pressroom air while the press is operating. This ensures that the VOC emissions released in the dryer are ducted to the control device do not escape into the surrounding pressroom. If a combined dryer and control device is a part of the press design, a 100% capture at the control inlet may be assumed for purposes of meeting the emission reduction limits.

As an alternative to the destruction efficiency, DNR is allowing for the use of an outlet concentration only. If the printer can show that the outlet concentration is less than 20 parts per million measured as hexane, they are deemed to be in compliance. Measuring the outlet concentration is an excellent alternative for those presses that use a combined dryer and oxidizer or when the printer consistently prints light coverage work that would not generate a high inlet concentration.

DNR has exempted two types of heatset presses from using pollution control devices due to the high cost associated with using these types of devices to reduce VOC emissions.

- Small heatset presses, those defined as presses with a width of 22 inches or less and
- Presses used to print books.

What are the VOC content limits for fountain solutions?

The VOC content limits for fountain solution are based on the type of lithographic printing, use of alcohol, and refrigeration of the fountain solution. These limits are as follows:

- Nonheatset web presses - The use of restricted alcohol is prohibited. The limit is 5%, by weight, with no refrigeration required.
- Sheet-fed presses - The limits have been set at 5% by weight for non-refrigerated fountain solutions and 8.5% by weight for those refrigerated below 60° F.
- Heatset web offset presses - The limit if it contains restricted alcohols is 1.6%, by weight, without refrigeration and 3% by weight if refrigerated below 60° F. The limit for fountain solutions with no restricted alcohol is 5%, by weight, with no refrigeration required.

There are two exemptions to these limits, which mean the requirements do not have to be met.

- Any press that has one gallon or less of total fountain solution and
- Small sheet-fed presses, which are defined as those that are 11 x 17 inches or less.

What are VOC content limits for blanket and roller wash?

The composition of blanket wash and roller wash (Meaning: cleaning solvent or solution used to remove excess inks, oils and debris from litho-graphic printing press equipment, including rollers, plates, and cylinders; cleaning solvent or solution used as a rubber rejuvenator or to remove excess inks, oils and debris from the outside of the press or areas immediately around the press is also considered to be blanket or roller wash) are as follows:

- 30 percent by weight VOC content, or
- composite VOC vapor pressures of less than 10 mm of mercury (Hg) at 20° C (68° F) with no limit on VOC content.

In addition, printers are allowed to use 110 gallons per year of cleaning solutions that do not meet the vapor pressure or VOC content limit.

Compliance Demonstration

“A compliance emission test performed in accordance with s. NR 439.07 no more than 2 years prior to the compliance deadline, which demonstrates compliance with the “Emission Limitations - dryer exhaust” section, is acceptable as a demonstration of compliance in accordance with the “Compliance Testing” section.”

Compliance Testing Requirements

The owner or operator of a heatset web lithographic printing press shall demonstrate compliance with the appropriate destruction efficiency or emission rate in the “Emission Limitations - dryer exhaust” section by performing compliance emission tests on each control device according to the requirements in the rule.

Compliance tests will be performed on of the following schedules:

- Any facility with allowable VOC emissions from lithographic printing presses of 100 tons or more per year shall perform an emission test which demonstrates compliance with the “Emission Limitations - dryer exhaust” section every 24 months. Each biennial test shall be performed within 90 days of the anniversary date of the initial emission test.
- Any facility with allowable VOC emissions from lithographic printing presses of less than 100 tons per year shall perform an emission test which demonstrates compliance with the “Emission Limitations - dryer exhaust” section every 48 months. Each test shall be performed within 90 days of the anniversary date of the initial emission test.

Recordkeeping

Records are required to demonstrate compliance with each of the limitations that apply, in the units of measurement and frequency appropriate to each.

Compliance Certification Statement and Signature Block

A responsible official for the printing facility should sign the certification statement.

A Responsible Official can be:

- the president, vice-president, secretary, or treasurer of the company that owns the facility;
- the owner of the facility;
- the facility engineer or supervisor;
- a government official if the facility is owned by the Federal, State, City, or County government; or
- a ranking military officer if the facility is located on a military base.

Submit the form to your Regional Office. A list of Regional Offices and their addresses can be found at: <http://dnr.wi.gov/topic/AirQuality/contacts.html>.