

4. Conveyorized degreasers. Except as provided under subd. 1.b., c. and f., the owner or operator of a conveyorized degreaser shall:

a. Minimize entrance and exit openings during operations so that no opening dimension exceeds the smallest physically possible by more than 20 centimeters (8 inches) or by more than 20% of the opening dimension, whichever is smaller; and

b. Provide the following safety switches:

1) A condenser flow switch or other switching system which shuts off the sump heat if the condenser coolant is either not circulating or too warm; and

2) A thermostatically activated control switch which shuts off the sump heat when the vapor level rises above the upper boundary of the normal range; and

3) A spray safety switch which shuts off the spray pump or the conveyor if the vapor level does not stay within the normal range; and

c. Install one of the following control devices:

1) Refrigerated chiller; or

2) Carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air-vapor area (when downtime covers are open), and exhausting less than 25 parts per million of solvent by volume averaged over a complete adsorption cycle; or

3) A system, demonstrated to have a control efficiency equivalent to or greater than 1) or 2), and approved by the department; and

d. Provide downtime covers for closing off the entrance and exit during shutdown hours; and

e. Place downtime covers over entrances and exits of conveyorized degreasers immediately after the conveyors and exhausts are shut down and not remove them until just before start-up; and

f. Minimize carryout emissions by:

1) Using a drying tunnel, rotating (tumbling) basket or their equivalent; and

2) Racking parts for best drainage; and

3) Maintaining the vertical conveyor speed at less than 3.3 meters per minute (11 feet per minute); and

g. Follow the requirements of subds. 2. g.3) and 4) and 3.d. and k.

(b) *Perchloroethylene dry cleaning.* 1. Applicability. a. Effective April 1, 1981, this paragraph applies, subject to the provisions of sub. (12), to all dry cleaning facilities in which perchloroethylene solvent is used.

b. The requirements of subd. 2.a. do not apply to perchloroethylene dry cleaning facilities which provide satisfactory documentation to the department showing that an adsorber cannot be accommodated because

of inadequate space or because insufficient steam capacity is available to desorb adsorbers.

2. Requirements. Except as provided under subd. 1., the owner or operator of a perchloroethylene dry cleaning facility shall:

a. Vent the entire dryer exhaust through:

1) A carbon adsorption system which shall emit no more than 100 ppm of VOC, before dilution; or

2) An alternative VOC emission control system demonstrated to achieve an equivalent VOC emission reduction as approved by the department.

b. Maintain the facility so as to prevent leakage of organic solvent from any components in the system and repair any leaks immediately;

c. Cook or treat all diatomaceous earth filters so that the residue contains 25 kilograms or less of VOCs per 100 kilograms of wet waste material;

d. Reduce the VOC content of all solvent still waste to 60 kilograms or less per 100 kilograms of wet waste material;

e. Drain all filtration cartridges, in the filter housing or other sealed container, for at least 24 hours before discarding the cartridges;

f. If transferring cartridges to another sealed container, make such transfer without permitting any solvent to be spilled; and

g. When possible, dry all drained cartridges without emitting VOCs to the atmosphere.

(c) *Petroleum liquid solvent dry cleaning.* 1. Applicability. Effective December 1, 1983, this paragraph applies, subject to the provisions of sub. (12), to petroleum liquid solvent washers, dryers, solvent filters, settling tanks, vacuum stills, piping, ductwork, pumps, storage tanks, and other containers and conveyors or petroleum liquid solvent that are used in petroleum liquid solvent dry cleaning facilities which have total emissions of VOCs from the facility of more than 100 tons per year and which are located within the counties of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha.

2. Requirements. a. The owner or operator of a petroleum liquid solvent dry cleaning facility shall limit VOC emissions from each petroleum liquid solvent dry cleaning dryer to an average of 3.5 kilograms per 100 kilograms, dry weight, of articles cleaned, or install and operate a solvent recovery dryer in a manner such that the dryer remains closed and the recovery phase continues until the flow rate of recovered solvent no longer exceeds 50 milliliters per minute.

b. The owner or operator of a petroleum liquid solvent dry cleaning facility shall reduce the VOC content of all filtration wastes to not more than 1.0 kilogram per 100 kilograms, dry weight, of articles cleaned before disposing of such wastes or exposing them to the atmosphere, or install and operate a cartridge filtration system, and drain the filter cartridges in their sealed housings for at least 8 hours before removing them.

1) Control organic compound emission by at least 85%, or

2) Where 85% control has been demonstrated to be technologically infeasible for a specific process line, control organic compound emissions by use of the latest available control techniques and operating practices demonstrating best current technology, as approved by the department.

3. Election. Surface coating and printing processes subject to the requirements of this subsection may instead elect, with the approval of the department, to meet the emission limitations of sub. (4), notwithstanding subs. (4) (a) 1., 2., 3., or 4. and (12), provided that:

a. The process line meets the specific applicability requirements of sub. (4) (c), (d), (e), (f), (g), (h), (i), (j), (k), (l) or (m); and

b. The owner or operator submits a written request to the department. Written requests under this subdivision shall include, in the case of sources constructed prior to August 1, 1979, a schedule for meeting the requirements of sub. (4).

(12) COMPLIANCE SCHEDULES. (a) *Applicability exceptions.* Paragraphs (b) through (h) do not apply to a source which is in compliance with the emission limitations of this section, provided the source has determined and certified compliance to the satisfaction of the department within 90 days after the date specified in subd. 1., 2., 3. or 4., nor do pars. (b) through (g) apply to a source on which construction or modification commenced on or after the specified date. Sources on which construction or modification commenced on or after the date specified in subd. 1., 2., 3. or 4., shall meet the emission requirements of this section in accordance with the provisions of par. (h).

1. The date of August 1, 1979, applies to all sources covered under subs. (2) (a) 1.c., (3) (a) 1.a., (3) (b) 1.a., (3) (c) 1.a., (4) (c) 1., (4) (d) 1., (4) (e) 1., (4) (f) 1., (4) (g) 1., (4) (h) 1., (4) (i) 1., (4) (j) 1., (6) (a) 1., (7) (a) 1., (7) (b) 1., and (7) (c) 1.

2. The date of April 1, 1981, applies to all sources covered under subs. (2) (a) 1.d., (2) (b) 1., (3) (a) 1.b., (3) (b) 1.b., (3) (c) 1.b., (3) (e) 1., (4) (k) 1., (4) (l) 1., (4) (m) 1., (6) (b) 1., (7) (d) 1., and (9) (a) 1.

3. The date of August 31, 1981, applies to all sources covered under sub. (8) (a) 1.

4. The date of December 1, 1983, applies to all sources covered under sub. (6) (c) 1.

(b) *Process and emission control equipment installations.* 1. Except as provided under par. (e) and sub. (13), the owner or operator of a VOC emission source proposing to install and operate VOC emission control equipment or replacement process equipment to comply with the emission limiting requirements of this section shall not exceed the deadlines specified for the following increments of progress as measured from the date specified in par. (a) 1., 2., 3. or 4. for that source:

a. Submit final plans for achieving compliance within 5 months.

b. Award contracts for the emission control systems or process equipment or issue orders for purchase of component parts to accomplish emission control within 8 months.

c. Commence construction or installation of the emission control system or process equipment within 13 months.

d. Complete construction or installation of the emission control system or process equipment within 25 months.

e. Achieve final compliance within 26 months of the date specified in par. (a) 1., 2., 3. or 4. for that source.

2. Any owner or operator of a source subject to the compliance schedule of subd. 1. shall certify to the department, within 7 days after the deadline for each increment of progress, whether the required increment of progress has been achieved.

(c) *Low solvent content coating or ink.* 1. Except as provided under subds. 2. through 5., par. (e) and sub. (13), the owner or operator of a VOC source proposing to employ low solvent content coating or ink application technology to comply with the requirements of this section shall not exceed the deadlines specified for the following increments of progress as measured from the date specified in par. (a) 1., 2. or 3. for that source:

a. Submit final plans for achieving compliance within 5 months.

b. Complete research and development work on low solvent content coatings or inks within 14 months.

c. Complete evaluation of product quality and commercial acceptability within 18 months.

d. Issue purchase orders for low solvent content coatings or inks and process modifications within 19 months.

e. Commence process modifications within 21 months.

f. Complete process modifications and begin the use of low solvent content coatings or inks within 27 months.

g. Achieve final compliance within 28 months of the date specified in par. (a) 1., 2. or 3. for that source.

2. The owner or operator of a can coating or flexible packaging facility proposing to employ low solvent content coating technology to comply with the requirements of sub. (4) (c) 2.d. or (4) (e) 2. may exceed each of the deadlines in subd. 1.b. through g. by 12 months in developing acceptable can end sealing compounds or coatings for hydrophobic flexible packaging substrates.

3. The owner or operator of a graphic arts facility proposing to employ low solvent content ink application technology to comply with the requirements of sub. (4) (1) may, for hydrophobic substrates, extend the date for achieving final compliance to December 31, 1985, provided:

a. Final plans for achieving compliance are submitted by September 1, 1981;

b. The plans include the increments of progress described in subd. 1.b. through f.;

c. Sufficient documentation is submitted to justify the extension; and

d. The plans provide for final compliance by December 31, 1985 through the use of an emission reduction system described in sub. (4) (1) 2.c. and 3. in case the product quality and commercial acceptability evaluation shows low solvent content ink application technology to be unsatisfactory.

4. The owner or operator of a miscellaneous metal parts and products coating facility proposing to employ low solvent content coating technology to comply with the requirements of sub. (4) (m) may, for extreme performance coatings requiring prolonged product quality evaluation periods, extend final compliance provided:

a. Final plans for achieving compliance are submitted by September 1, 1981;

b. The plans include the increments of progress described in subd. 1.b. through f.;

c. Sufficient documentation is submitted to justify the extension; and

d. Final compliance is extended to accommodate the prolonged evaluation period but in no case beyond December 31, 1985.

5. Where the department determines that the low solvent content coating or ink application technology has been sufficiently researched and developed for a particular application, the owner or operator of a VOC source proposing to comply with the requirements of this section through application of low solvent content coatings or inks shall not exceed the deadlines specified for the following increments of progress as measured from the date specified in par. (a) 1., 2. or 3. for that source:

a. Submit final plans for achieving compliance within 5 months.

b. Complete evaluation of product quality and commercial acceptability within 11 months.

c. Issue purchase orders for low solvent content coatings or inks and process modifications within 13 months.

d. Commence process modifications within 15 months.

e. Complete process modifications and begin the use of low solvent content coatings or inks within 20 months.

f. Achieve final compliance within 21 months of the date specified in par. (a) 1., 2. or 3. for that source.

6. Any owner or operator of a stationary source subject to one of the compliance schedules in this paragraph shall certify to the department, within 7 days after the deadline for each increment of progress, whether the required increment of progress has been achieved.

(d) *Equipment modification.* 1. Except as provided under par. (e) and sub. (13), the owner or operator of a VOC source proposing to comply with the requirements of this section by modification of existing processing or emission control equipment shall not exceed the deadlines specified for the following increments of progress as measured from the date specified in par. (a) 1., 2. or 4. for that source:

a. Submit final plans for achieving compliance within 5 months.

b. Award contracts for equipment modifications or issue orders for the purchase of component parts to accomplish equipment modifications within 7 months.

c. Commence construction or installation of equipment modifications within 10 months.

d. Complete construction or installation of equipment modifications within 16 months.

e. Achieve final compliance within 20 months of the date specified in par. (a) 1., 2. or 4. for that source.

2. Any owner or operator of a source subject to the compliance schedule of subd. 1. shall certify to the department, within 7 days after the deadline for each increment of progress, whether the required increment of progress has been achieved.

(e) *Alternate compliance schedules.* 1. Notwithstanding the deadlines specified in pars. (b) through (d), for any particular source the department may issue or approve a separate compliance schedule with earlier deadlines, if it finds that such a schedule would be feasible, or with later deadlines if it finds that those specified in pars. (b) through (d) would not be feasible. The alternate compliance schedule may be proposed by the owner or operator of a VOC source. If the alternate compliance schedule provides later deadlines, the following conditions shall be met:

a. A request for an alternate compliance schedule shall be received by the department within 2 months of the date specified in par. (a) 1., 2. or 3. for that source.

b. Final plans for achieving compliance with the requirements of this section shall be submitted within 5 months of the date specified in par. (a) 1., 2. or 3. for that source.

c. The alternative compliance schedule shall include the same increments of progress as the schedule it is to replace.

d. Sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators shall be submitted by the owner or operator to justify the new deadlines proposed for the increments of progress.

2. All alternate compliance schedules proposed or promulgated under par. (e) shall provide for compliance of the source with the requirements of subs. (2) through (10) as expeditiously as practicable but not later than December 31, 1982 or, where the owner or operator proposes to comply through development of a new surface coating which is subject to approval by a federal agency, not later than December 31, 1985.

3. Any schedule approved under this paragraph may be revoked at any time if the source does not meet the deadlines specified for the increments of progress. Upon any such revocation the applicable schedule under pars. (b) to (d) shall be in effect.

(f) *Phased emission reduction schedules.* 1. This paragraph applies only to sources covered under sub. (4) (g) and (m) 3.

2. Except as provided under sub. (13), the owner or operator of a source required to undertake a phased compliance program shall not exceed the following deadlines:

a. Plans for the program of phased compliance shall be submitted within 12 months of the date specified in par. (a) 1. or 2. for that source.

b. The compliance plan shall specify increments of progress with such deadlines as necessary to meet interim compliance dates specified in the applicable rule.

c. Final compliance shall be on or before the date specified in the applicable rule or approved compliance plan, but not later than December 31, 1987.

(g) *Final compliance plans.* 1. If the department finds any compliance plan submitted under this subsection to be unsatisfactory, it may require that the plan be resubmitted with appropriate revisions.

2. Process lines subject to requirements of this subsection on which construction or modification commenced on or before August 1, 1979 shall continue to comply with the requirements of sub. (11) (a) 2.a. during any interim period prior to the final compliance date in the applicable compliance schedule.

3. Process lines covered under subs. (2) (a) 1.d., (2) (b) 1., (3) (a) 1.b., (3) (b) 1.b., (3) (c) 1.b., (3) (e) 1., (4) (k) 1., (4) (l) 1., (4) (m) 1., (6) (b) 1., (6) (c) 1., (7) (d) 1., (8) (a) 1., and (9) (a) 1. on which construction or modification commenced on or after August 1, 1979, but before April 1, 1981 shall continue to comply with the requirements of sub. (11) (a) 2.b. during any interim period prior to the final compliance date in the applicable compliance schedule.

4. Process lines covered under sub. (8) (a) 1. on which construction or modification commenced on or after April 1, 1981 but before August 31, 1981, and process lines covered under sub. (6) (c) 1. on which construction or modification commenced on or after April 1, 1981 but before December 1, 1983 shall continue to comply with the requirements of sub. (11) (a) 2.c. during any interim period prior to the final compliance date in the applicable compliance schedule.

5. Where a source is not subject to requirements of this subsection and was previously unregulated under this section, the final compliance plan shall specify reasonable measures to minimize emissions of VOCs during the interim period prior to the final compliance date.

(h) *New and modified sources.* Any source on which construction or modification commenced on or after the date specified for such source in par. (a) 1., 2., 3. or 4. shall meet the emission limitations of this section upon start-up unless the owner or operator of the source demonstrates, to the satisfaction of the department, that compliance upon start-up would be technologically infeasible. Such sources shall instead meet a department-specified compliance schedule which provides for interim emission limitations and for ultimate compliance with the emission limitations of this section. Ultimate compliance shall be as soon as practicable but in no event later than the date the source would have been required to meet under par. (b), (c), (d), or (f) if it had been constructed or modified prior to the date specified in par. (a) 1., 2., 3. or 4.

(13) EXCEPTIONS, REGISTRATION AND DEFERRALS. (a) *Exceptions for certain organic compounds.* 1. For sources on which construction or modification commenced before August 1, 1979, the provisions of subs. (2) (c), (3) (f) and (11) (a) do not apply to the storage, transfer, use or application of saturated halogenated hydrocarbons, perchloroethylene or acetone.

2. The requirements of this section do not apply to the use or application of insecticides, pesticides or herbicides or to the use or emission of trichlorotrifluoroethane (freon 113), ethane or methane.

(b) *Internal offsets.* 1. No owner or operator of any surface coating or printing facility shall cause or allow the emission of VOCs from any coating or printing line to exceed the limitations contained in this section unless:

a. Each coating or printing line which is involved in the internal offset is operating with an emission rate of VOCs less than or equal to the adjusted emission rate for the coating or printing line (which may be a weighted daily average) contained in a compliance plan approved under this paragraph;

b. The construction or modification of the coating or printing line was commenced on or before:

1) August 1, 1979, for sources covered under sub. (4) (c) 1., (d) 1., (e) 1., (f) 1., (g) 1., (h) 1., (i) 1. and (j) 1.; and

2) April 1, 1981, for sources covered under sub. (4) (k) 1., (l) 1. and (m) 1.; and

c. The combined emission rate from all coating or printing lines involved in the internal offset is less than or equal to an emission rate determined by the following equation:

$$E = \frac{A_1 B_1 C_1}{D_1} + \frac{A_2 B_2 C_2}{D_2} + \dots + \frac{A_n B_n C_n}{D_n}$$

where E = the total allowable emission rate from all of the coating or printing lines involved in the internal offset in kilograms per hour (pounds per hour),  $A_{1,2 \dots n}$  = the allowable emission rate for each coating or printing line pursuant to sub. (4) in kilograms per liter (pounds per gallon) of coating or ink, excluding water, delivered to the applicator,  $B_{1,2 \dots n}$  = the amount of coating material or ink in liters per hour (gallons per hour), excluding water, delivered to the applicator,  $C_{1,2 \dots n}$  = volume fraction of solids in the coating or ink, excluding water, delivered to the applicator, and  $D_{1,2 \dots n}$  = theoretical volume fraction of solids, in the coating or ink necessary to meet the allowable emission rate for each coating or printing line pursuant to sub. (4) calculated from:

$$D_{1,2 \dots n} = 1 - \frac{A_{1,2 \dots n}}{P_{1,2 \dots n}}$$



where  $P_{1,2,\dots,n}$  = the density of solvent used in the coating or ink delivered to the applicator in kilograms per liter (pounds per gallon), and

d. The owner or operator has certified, and the department has confirmed, that the emissions of all air contaminants from all existing sources owned or controlled by the owner or operator in the state are in compliance with or under a schedule for compliance as expeditiously as practicable with, all applicable local, state and federal laws and regulations.

2. The provisions of subd. 1. apply to a surface coating or printing facility only after the department has approved a compliance plan which:

a. Specifies an emission rate for each of the coating or printing lines involved in the internal offset, and

b. Includes a compliance schedule consistent with sub. (12).

3. If, at any time, the department determines that one of these emission rates is being exceeded, approval of the compliance plan may be revoked and subd. 1. shall no longer apply to the facility.

4. The compliance plan required under subd. 2. shall include a compliance schedule consistent with sub. (12).

(c) *Compliance schedule delays.* Notwithstanding any compliance schedule approved or issued under sub. (12), the department may approve a new compliance schedule which provides additional time for completion of an increment of progress, provided:

1. That the owner or operator of the source is able to document to the department's satisfaction that the source is unable to meet the applicable deadline under sub. (12) for the increment of progress due to circumstances beyond the owner or operator's control which could not reasonably have been avoided by using all prudent planning;

2. Final compliance for sources covered under subs. (2) (a) 1.c., (3) (a) 1.a., (b) 1.a., (c) 1.a., (4) (c) 1., (d) 1., (e) 1., (f) 1., (h) 1., (i) 1., (j) 1., (6) (a) 1., (7) (a) 1., (b) 1. and (c) 1. is not later than December 31, 1982; and

3. For sources covered under subs. (2) (a) 1.d., (b) 1., (3) (a) 1.b., (b) 1.b., (c) 1.b., (e) 1., (4) (k) 1., (l) 1., (m) 1., (6) (b) 1., (7) (d) 1., (8) (a) 1. and (9) (a) 1. final compliance shall not exceed that required in sub. (12).

(d) *Limitation of restrictions to the ozone season.* Where the requirements of this section are met by means of a fossil-fuel fired incinerator, use of the incinerator shall be required only during the ozone season, provided that operation of the incinerator is not required for purposes of occupational health or safety or for the control of toxic or hazardous substances, malodors, or other pollutants regulated by other sections of this chapter. The provisions of this paragraph may be applied, subject to approval of the department, where the requirements of this section are met by use of other energy intensive control devices.

(e) *Registration of certain solvents, exemption.* 1. Except for the provisions of sub. (1) (a) and (b), and this paragraph, this section does not apply to the use of methylene chloride and methyl chloroform.

2. Any person operating a source which has total combined emissions of methylene chloride and methyl chloroform in excess of 0.5 tons in a calendar year shall register the solvent use with the department by February 1 of the year following such use.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr., Register, June, 1975, No. 234, eff. 7-1-75; am. Register, July, 1979, No. 283, eff. 8-1-79; am. (3)(c) 2. and 4., Register, August, 1979, No. 284, eff. 9-1-79; am., Register, March, 1981, No. 303, eff. 4-1-81; cr. (12) (b) and am. (12) (a) (intro.) and (g) 5., Register, July, 1981, No. 307, eff. 8-1-81; am. (13) (a) and cr. (13) (e), Register, December, 1982, No. 324, eff. 1-1-83; am. (4) (b) 3., (g) 4. f., (m) 1. f., (6) (b) 1. b. and (13) (b) 1. c., cr. (14) (c) 3., Register, July, 1983, No. 331, eff. 8-1-83; cr. (6) (c), am. (12) (a), (b), (d), (g) 3. and 4. and (h), Register, November, 1983, No. 335, eff. 12-1-83; reprinted to correct (6) (c) 1., (12) (a) 4. and (g) 4., Register, May, 1984, No. 341.

**NR 154.14 Control of carbon monoxide emissions. (1) GENERAL LIMITATIONS.** No person shall cause, suffer, allow, or permit emission of carbon monoxide to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution.

(2) **CARBON MONOXIDE LIMITATIONS.** No person shall cause, suffer, allow, or permit significant emissions of carbon monoxide from any new direct source not listed below to be emitted to the ambient air unless such emissions are incinerated at 1,300°F for 0.3 seconds, or reduced by some other means an equivalent amount. Such emissions shall include, but are not limited to, the exhaust from cupolas, blast furnaces, basic oxygen furnaces; or waste streams from petroleum fluid cokers or other petroleum processes. Compliance with these limitations shall be shown to the department on initial startup of the source.

(a) Petroleum refineries (fluid catalytic cracking unit catalyst regenerators): 0.050% carbon monoxide by volume, dry basis.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; am. (2) and cr. (2)(a), Register, June, 1975, No. 234, eff. 7-1-75.

**NR 154.145 Control of lead emissions. (1) GENERAL LIMITATIONS.** No person may cause, allow or permit emissions into the ambient air of lead or lead compounds which substantially contribute to the exceeding of an air standard or air increment, or which creates air pollution.

(2) **LEAD LIMITATIONS.** No person may cause, allow or permit lead or lead compounds to be emitted to the ambient air in amounts greater than the department may establish by permit condition under s. 144.393 (5) or 144.394, Stats., by rule or by special order.

History: Cr. Register, April, 1983, No. 328, eff. 5-1-83.

**NR 154.15 Control of nitrogen compound emissions. (1) GENERAL LIMITATIONS.** No person shall cause, suffer, allow, or permit nitrogen oxides or nitrogen compounds to be emitted to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution.

(2) **NITROGEN OXIDES LIMITATIONS.** No person shall cause, suffer, allow, or permit nitrogen oxides (expressed as NO<sub>2</sub>) to be emitted to the ambient air in amounts greater than:

(a) New or modified fossil fuel-fired steam generators rated at over 250 million BTU per hour:

1. Firing of gaseous fossil fuel; 0.20 pounds of NO<sub>2</sub> per million BTU input.