

2. Emission control requirements. Except as provided under subd. 1., the owner or operator of a synthesized pharmaceutical manufacturing facility shall:

a. Equip each vent from reactors, distillation operations, crystallizers, centrifuges, or vacuum dryers with surface condensers or an equally effective control device as approved by the department. If a surface condenser is used, the condenser outlet gas temperature shall not exceed:

1) -25°C (-13°F) for VOCs with vapor pressure greater than 40 kPa (5.8 psia) as measured at 20°C (68°F);

2) -15°C (5°F) for VOCs with vapor pressure between 20 kPa (2.9 psia) and 40 kPa (5.8 psia) as measured at 20°C (68°F);

3) 0°C (32°F) for VOCs with vapor pressure between 10 kPa (1.5 psia) and 20 kPa (2.9 psia) as measured at 20°C (68°F);

4) 10°C (50°F) for VOCs with vapor pressure between 7 kPa (1.0 psia) and 10 kPa (1.5 psia) as measured at 20°C (68°F);

5) 25°C (77°F) for VOCs with vapor pressure between 3.5 kPa (0.5 psia) and 7 kPa (1.0 psia) as measured at 20°C (68°F).

b. Limit the VOC emissions from air dryer exhaust systems and production equipment exhaust systems to 15.0 kilograms per day (33 pounds per day) or to 10% of the uncontrolled emission rate of the system, whichever is less stringent.

c. Enclose all centrifuges, rotary vacuum filters, and any other filters having an exposed liquid surface, where the liquid contains VOCs and exerts a total VOC vapor pressure of 3.5 kPa (0.5 psia) or more at 20°C (68°F).

d. Install covers on all in-process tanks that contain a VOC at any time. Covers are to be closed except for necessary operator access during production, sampling, maintenance or inspection.

e. Repair all visually detectible leaks of liquid VOCs the first time the equipment is off-line for a period long enough to complete the repair.

(b) Reserved.

(10) RESERVED.

(11) OTHER DIRECT SOURCES. (a) Process lines emitting organic compounds. 1. Applicability. a. This paragraph applies to all process lines which emit organic compounds, solvents or mixtures, with the following exceptions:

1) Process lines outside the Southeast Wisconsin Intrastate AQCR on which construction or modification commenced on or before April 1, 1972.

2) Organic compound-water separation system that process 757 liters (200 gallons) per day or less.

3) Enclosed paint spraying operations from which emissions are never greater than 13.6 kilograms (30 pounds) in any day and never greater than 2.8 kilograms (6 pounds) in any hour.

4) All other process lines from which organic compound emissions are never greater than 6.8 kilograms (15 pounds) in any day and never greater than 1.4 kilograms (3 pounds) in any hour.

b. Where process lines are subject to emission limitations listed elsewhere in this section, the requirements of this paragraph shall apply in accord with the provisions of sub. (12) (g) 2.

2. Emission limitations. Process lines to which this paragraph applies shall meet the following emission limitations:

a. Process lines on which construction or modification commenced before August 1, 1979, shall control emissions of photochemically reactive organic compounds by 85%.

b. Process lines on which construction or modification commenced on or after August 1, 1979, but before April 1, 1981, shall control emissions of all organic compounds by 85% or, where a provision elsewhere in this section also applies, meet the requirement which results in emission of the smallest quantity of VOCs.

c. Process lines on which construction or modification commenced after April 1, 1981, and which are not subject to emission limitations listed elsewhere in this section shall:

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. 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).

(b) RESERVED.

(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. or 3., 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. or 3., 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.

(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. or 3. 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. or 3. 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 subs. 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) (l) 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) (l) 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. or 2. for that source:

a. Submit final plans for achieving compliance with 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. or 2. 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., (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 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 was not subject to the specific limitations of this section prior to the date specified in par. (a) 1., 2. or 3., 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. or 3. 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), (e) or (f) if it had been constructed or modified prior to the date specified in par. (a) 1., 2. or 3.

(13) EXCEPTIONS AND DEFERRALS. (a) Exceptions for certain organic compounds. For sources on which construction or modification is commenced on or before August 1, 1979, the provisions of subs. (2) (c), (3) (e) and (11) (a) shall not apply to the use or application of saturated halogenated hydrocarbons, perchloroethylene or acetone. In addition, none of the provisions of this section shall 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 subs. (4) (c) 1., (4) (d) 1., (4) (e) 1., (4) (f) 1., (4) (g) 1., (4) (h) 1., (4) (i) 1. and (4) (j) 1.; and

2) April 1, 1981, for sources covered under subs. (4) (k) 1., (4) (l) 1. and (4) (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:

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

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:

$$D_{1,2 \dots n} = 1 - \left(\frac{A_{1,2 \dots n}}{\text{density of solvent used in coating or ink delivered to applicator in kilograms per liter (pounds per gallon)}} \right)$$

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., (3) (b) 1.a., (3) (c) 1.a., (4) (c) 1., (4) (d) 1., (4) (e) 1., (4) (f) 1., (4) (h) 1., (4) (i) 1., (4) (j) 1., (6) (a) 1., (7) (a) 1., (7) (b) 1. and (7) (c) 1. is not later than December 31, 1982; and

3. For 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., (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.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and rec., 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) (h) and am. (12) (a) (intro) and (g) 5., Register, July, 1981, No. 307, eff. 8-1-81.

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 154.15 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 NO₂) 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 NO₂ per million BTU input.

2. Firing of liquid fossil fuel: 0.30 pounds of NO₂ per million BTU input.

3. Firing of solid fossil fuel: 0.70 pounds of NO₂ per million BTU input.

(b) New or modified weak nitric acid plants (acid 30 to 70% in strength:) 3.0 pounds of NO₂ per ton of acid produced.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72.

NR 154.16 Use of standby fuel. (1) Use of standby fuel shall meet the following limitations:

(a) Visible emissions:

1. The limits in visible emission shall be the same as section NR 154.11 (7) (c) of these rules.

(b) Particulate emission limits:

1. No person while burning standby fuel shall cause, suffer, allow, or permit to be emitted to the ambient air particulate matter which substantially contribute to the exceeding of an air standard or create air pollution.

(c) Sulfur emission limits:

1. In the Southeast Wisconsin Intrastate Air Quality Control Region, no person shall cause, suffer, allow, or permit use of standby fuel with greater sulfur content than:

a. Coal: 1.50% (by weight as fired)

b. Residual Oil: 1.00%

c. Distillate Oil: 0.70%

2. Variance from the above sulfur limits may be granted by the department until July 1, 1975 or until existing fuel supplies are used.

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

NR 154.17 Control of motor vehicles, internal combustion engines, and mobile sources. (1) GENERAL LIMITATIONS. No person shall cause, suffer, allow, or permit emissions of particulate matter, sulfur oxides, hydrocarbons, carbon monoxide, nitrogen oxides, or odors from a motor vehicle, internal combustion engine, or mobile source which substantially contribute to the exceeding of an air standard or create air pollution.