

## Chapter NR 154

### AIR POLLUTION CONTROL

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**History:** Chapter NR 154 as it existed on March 31, 1972 was repealed and a new chapter NR 154 was created, Register, March, 1972, No. 195, effective April 1, 1972.

#### FOREWORD

Chapter 144, Stats., directs the department of natural resources to organize a comprehensive program to enhance the quality, management, and protection of the state's air resources. These rules are one part of that program. Chapter 144 also stresses the role of county government in establishing local air pollution control programs in cooperation with the department.

The objectives of these rules are to maintain standards of air quality at a level which will provide adequate protection to public health and welfare, and to prevent detrimental effect on property and our environment.

Nothing in these rules or in ch. 144, Stats., prohibits a county or local jurisdiction from adopting more restrictive ordinances where local conditions indicate their need. These rules, all or in part, may be adopted by reference by a county or municipality.

It shall be the policy of the department to seek reasonable uniformity among local air pollution control ordinances in order to make the statewide comprehensive program more effective and less complicated for all persons concerned.

These rules are subject to periodic revision to reflect advancing control technology, increasing knowledge of the effect on health of sub-acute long term exposure to air pollutants and increased knowledge of the effect of pollutants on plant life, animal life, soils, and water resources.

**NR 154.01 Definitions.** (1) "Accumulator" means the reservoir of a condensing unit receiving the condensate from the condenser. This includes hot wells.

(2) "Adsorption system" means a device containing adsorbent material (e.g., activated carbon, alumina, silica gel); an inlet and outlet for exhaust gases; and a system to regenerate the saturated adsorbent.

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(3) "Affected facility" means any type or class of air contaminant source which is required to submit a notice of intent and plans and specifications to the department prior to construction.

(4) "Air contaminant" means dust, fumes, mist, liquid, smoke, other particulate matter, vapor, gas, odorous substances, or any combination thereof but not including uncombined water vapor.

(5) "Air contaminant source" means any facility, building, structure, equipment, vehicle, or action, or combination thereof which may directly or indirectly result in the emission of any air contaminant.

(6) "Aircraft operation" means a landing or takeoff.

(7) "Air curtain destructor" means an incineration device which utilizes a pit for burning combustible matter, into which air is blown at high velocity through a manifold and nozzle system along one side of the pit to create a turbulent, vortical flow of air and combustible gases in the pit to bring about complete combustion.

(8) "Air dried coating" means coatings which are dried by the use of air or forced warm air. Forced warm air includes processes whereby the coated object is heated above ambient temperature up to a maximum of 90°C (194°F) to decrease drying time.

(9) "Air pollution" means the presence in the atmosphere of one or more air contaminants in such quantities and of such duration as is or tends to be injurious to human health or welfare, animal or plant life, or property or would unreasonably interfere with the enjoyment of life or property.

(10) "Air pollution episode levels" means levels of air quality which are so degraded as to pose imminent danger to public health.

(a) "Alert": The alert level is that concentration of one or more air contaminants at which the first stage control actions begin.

(b) "Warning": The warning level indicates air quality is continuing to degrade and that additional control actions are necessary.

(c) "Emergency": The emergency level indicates that the air quality is continuing to degrade to a level which should never be reached and that the most stringent control actions are necessary.

(11) "Air quality maintenance area" means an area designated pursuant to federal or Wisconsin laws as having the potential for exceeding any of the ambient air quality standards.

(12) "Air region" means an area such as an AQCR designated pursuant to federal or Wisconsin laws in which a program to maintain or achieve air standards is implemented on a regional basis.

(13) "Ambient air" means the portion of the atmosphere external to buildings and to which the general public has access.

(14) "API" means American Petroleum Institute, 2101 L Street, N.W., Washington, D.C. 20001.

(15) "Application area" means the area where a coating is applied by spraying, dipping or flowcoating techniques.

(16) "Approved" means approved by the department of natural resources.

(17) "AQCR" means air quality control region. Air quality control regions all or part of which lie in Wisconsin are delineated in s. NR 155.02(2), Wis. Adm. Code.

(18) "Areawide air quality analysis" means a macroscale analysis utilizing a modeling technique approved by the department.

(19) "Asbestos" means any of the 6 naturally occurring hydrated mineral silicates: actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite.

(a) "Asbestos material" means asbestos or any material containing asbestos.

(b) "Asbestos mill" means any facility engaged in the conversion or any intermediate step in the conversion of asbestos ore into commercial asbestos. Outside storage of asbestos materials is not considered a part of such a facility.

(c) "Asbestos tailings" means any solid waste products of asbestos minings or milling operations which contain asbestos.

(20) "ASME" means American Society of Mechanical Engineers, 345 E. 47th Street, New York, New York 10017.

(21) "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum.

(22) "Associated parking area" means a parking facility owned or operated in conjunction with an indirect source.

(23) "ASTM" means American Society for Testing and Materials, 1916 Race St., Philadelphia, PA 19103.

(24) "Automobile" means all passenger cars or passenger car derivatives capable of seating 12 or fewer passengers.

(25) "'Average daily traffic' or 'ADT'" means the total traffic volume during a given time period in whole days greater than one day and less than one year divided by the number of days in that time period.

(26) "Average monthly storage temperature" means an arithmetic average calculated for each calendar month, or portion thereof if storage is for less than a month, from bulk petroleum liquid storage temperatures determined at least once every 7 days.

(27) "Baseline transfer efficiency" means the typical transfer efficiency, as defined by the department, for a specific operation in an industry.

(28) "Bead dipping" means the dipping of an assembled tire bead into a solvent based cement.

(29) "Blade coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a straight-edged

blade that spreads the coating evenly over the full width of the substrate.

(30) "Boiler" means any device with an enclosed combustion chamber in which fuel is burned to heat a liquid for the primary purpose of producing heat or power by indirect heat transfer.

(31) "Bottom filling" means the filling of a tank truck or stationary storage tank through an opening that is flush with or near the tank bottom.

(32) "Breakdown" means a sudden failure of emission control or emission monitoring equipment to function as a result of wear, failure to repair, breakage, unavoidable damage, or other unintentional causes.

(33) "BTU" means British thermal unit.

(34) "Bulk gasoline plant" means a gasoline storage and distribution facility which receives gasoline from bulk terminals, stores it in stationary storage tanks, and subsequently distributes it to gasoline dispensing facilities.

(35) "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck.

(36) "Capture efficiency" means the weight per unit time of an air contaminant entering a capture system and delivered to a control device divided by the weight per unit time of the air contaminant generated by the source, expressed as a percentage.

(37) "Capture system" means the equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport an air contaminant to a control device.

(38) "Carbon bed breakthrough" means a concentration of VOC in the exhaust from a carbon adsorption device that exceeds 10% weight of the inlet VOC concentration.

(39) "Class II hardboard paneling finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

**Note:** See National Bureau of Standards, Voluntary Product Standard PS-59-73, "Prefinished Hardwood Paneling." Copies of this document are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin and may be obtained for personal use from National Bureau of Standards, Washington, D.C. 20234.

(40) "Clear coat" means a coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color.

(41) "Coating applicator" means a device or devices used at a single location in a coating line to apply a surface coating of a particular material.

(42) "Coating line" means one or more apparatus or operations, which may include a coating applicator, flash-off area, and oven, wherein a surface coating is applied, dried, or cured.

(43) "Coil coating" means the coating of any flat metal sheet or strip that comes in rolls or coils.

(44) "Cold cleaning" means the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.

(45) "Commence construction" means to engage in a program of on-site construction, including site clearance, grading, dredging or landfilling specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source.

(46) "Commence modification" means to engage in a program of on-site modification which may include site clearance, grading, dredging or landfilling in preparation for a specific modification of a stationary source.

(47) "Commercial asbestos" means any variety of asbestos which is produced by extracting asbestos from asbestos ore.

(48) "Component" means, for purposes of petroleum refineries, any piece of equipment at a refinery which has the potential to leak VOCs. These pieces of equipment include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open ended pipes. Excluded from these pieces of equipment are valves which have no external controls, such as in-line check valves.

(49) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressure and remains liquid at standard conditions.

(50) "Condenser" means any heat transfer device used to liquefy vapors by removing their latent heats of vaporization. Such devices include, but are not limited to, shell and tube, coil, surface, or contact condensers.

(51) "Continuous vapor control system" means a vapor control system that destroys or removes vapors, such as those displaced from tanks during filling, on a demand basis without intermediate accumulation.

(52) "Control device" means equipment used to destroy or remove air contaminant in a gas stream prior to emission.

(53) "Control system" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of air contaminants emitted to the atmosphere.

(54) "Conveyorized degreasing" means the continuous process of cleaning and removing soils from metal surfaces by operating with either cold or vaporized solvents.

(55) "Crude petroleum" means a naturally occurring mixture which consists of hydrocarbons; or sulfur, nitrogen and oxygen derivatives of hydrocarbons, and which is liquid at standard conditions.

(56) "Custody transfer" means the transfer of produced crude petroleum or condensate, after processing or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(57) "Cutback asphalt" means asphalt cement which has been liquefied by blending with petroleum solvents (diluent) other than residual oils. Upon exposure to atmospheric conditions the diluents evaporate, leaving the asphalt cement to perform its function. Asphalt which contains less than 5% by weight petroleum solvents (disregarding any residual oils added) is not included in this definition.

(58) "Day" means a 24-hour period beginning at midnight.

(59) "Delivery vessel" means a tank truck or trailer or a railroad tank car equipped with a storage tank used for the transport of gasoline from sources of supply to stationary storage tanks of bulk gasoline plants or gasoline dispensing facilities.

(60) "Department" means the department of natural resources, state of Wisconsin.

(61) "Direct source" means any stationary source which may directly result in the emission of any air contaminant at a fixed location (e.g., building demolition, foundry, grain elevator, gravel or stone quarry, paper mill, power plant, etc.).

(62) "Dose" means the total exposure to a pollutant over a specified time period.

$$\text{Dose} = \int_{T_1}^{T_2} C dT$$

where  $T_1$  is the starting time,  $T_2$  the end of the time period and  $C$  is the pollutant concentration which varies with time,  $C = f(T)$ .

(63) "Dry cleaning facility" means any facility engaged in the cleaning of fabrics in an essentially nonaqueous solvent by means of one or more washes in solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. The facility includes but is not limited to any washer, dryer, filter and purification systems, waste disposal systems, holding tanks, pumps, and attendant piping and valves.

(64) "Emergency or reserve equipment" means that equipment used when normal equipment fails, or used only to meet high peak loads.

(65) "Emission" means a release, whether directly or indirectly, or any air contaminant to the ambient air.

(66) "Emission point" means any individual opening at a fixed location through which air contaminants are emitted.

(67) "Emulsified asphalt" means an emulsion of asphalt cement and water which contains a small amount of an emulsifying agent; a heterogeneous system containing 2 normally immiscible phases (asphalt and water) in which the water forms the continuous phase of the emulsion, and minute globules of asphalt form the discontinuous phase.

(68) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and which functions as a gasket when the end is assembled on the can.

(69) "Equivalent air-dried kraft pulp" means pulp production which produces a loading of black liquor solids to the recovery furnace equivalent to that loading produced with kraft pulp.

(70) "Equivalent opacity" means an opacity of 20% per Ringlemann number.

(71) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and to provide background for the lithographic or printing operation.

(72) "Extreme performance coatings" means coatings designed for harsh exposure or exposure to one or more of the following: the weather all of the time, temperatures consistently above 95°C, detergents, abrasive and scouring agents, solvents, corrosive atmospheres, or similar environmental conditions.

(73) "Fabric coating" means the coating or printing of a textile substrate with a blade, roll, rotogravure or dip coater, or other coating applicator, to impart properties that are not initially present, such as strength, stability, water or acid repellancy, or appearance.

(74) "Facility" means an establishment—residential, commercial, institutional or industrial—which emits or causes emissions of air contaminants.

(75) "Firebox" means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator.

(76) "Flashoff area" means the space between the application area and the oven.

(77) "Flexographic printing" means the application of words, designs or pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

(78) "Floating roof" means a storage tank cover consisting of a double deck or pontoon single deck, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to seal the space between the roof edge and tank wall. The floating roof may be either a covered external floating roof in an open storage tank or an internal floating cover beneath a fixed roof.

(79) "Forebays" means the primary sections of a wastewater separator.

(80) "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a

vapor degreaser it means the distance from the top of the vapor zone to the lip of the degreaser tank.

(81) "Freeboard ratio" means the freeboard height divided by the internal width of the degreaser tank.

(82) "Fuel" means any solid, liquid or gaseous materials used to produce useful heat by burning.

(83) "Fuel gas" means any gas which is generated by a petroleum refinery process unit or by a petroleum liquid transfer operation and which is combusted, or any gaseous mixture of such gas and natural gas which is combusted.

(84) "Fugitive dust" means solid airborne particles emitted from any source other than a flue or stack.

(85) "Fugitive emission" means an emission from any emission point within a facility other than a flue or stack.

(86) "Furniture metal coating" means the surface coating of any furniture made of metal or any metal part which will be assembled with other metal, wood, fabric, plastic or glass parts to form a furniture piece.

(87) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 27.6 kPa (4 psia) or greater.

(88) "Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

(89) "Gas service" means petroleum refinery equipment which processes, transfers or contains a VOC or mixture of VOCs in the gaseous phase.

(90) "Green tires" means assembled tires before molding and curing have occurred.

(91) "Green tire spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.

(92) "Hardboard" means a panel manufactured primarily from interfelted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.

(93) "Hardwood plywood" means a plywood whose surface layer is a veneer of hardwood.

(94) "Heat sensitive material" means materials which cannot consistently be exposed to temperatures greater than 95°C (203°F).

(95) "Highway project" means all or a portion of a proposed new or modified section of highway. Where an environmental impact document is to be prepared, the highway project may be taken to cover the same length of highway.

(96) "Hydrocarbon" means any organic compound containing carbon and hydrogen.



(97) "Hydrophobic substrate" means any substrate that is resistant to or avoids wetting. This may include but is not limited to polyethylene, polypropylene, cellophane, metalized polyester, nylon, and mylar.

(98) "Implementation plan" means a plan adopted to implement, maintain, and enforce air standards within an air region or portion thereof.

(99) "Incinerator" means a combustion apparatus designed for high temperature operation in which solid, semisolid, liquid, or gaseous combustible wastes are ignited and burned to produce solid and gaseous residues containing little or no combustible material.

(100) "Indirect source" means any stationary source which conveys motor vehicles or which attracts or may attract mobile source activity and thus indirectly causes the emission of any air contaminant. Such indirect sources include, but are not limited to highways and roads; parking facilities; retail, commercial and industrial facilities; recreation, amusement, sports and entertainment facilities; airports; office and government buildings; apartment and condominium buildings; and education facilities.

(101) "Interior sheet base coating" means a coating applied by roller coater or spray to the interior side of sheets from which cans are formed to provide a protective lining between the can metal and product.

(102) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(103) "Intermittent vapor control system" means a vapor control system that employs an intermediate vapor holder to accumulate vapors displaced from tanks during filling. The control device destroys or removes the accumulated vapors only during automatically controlled cycles.

(104) "Isokinetic sampling" means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the same point.

(105) "KPa" means kilo Pascals (1.0 kPa = 0.15 psia).

(106) "Kraft process" means any pulping process which uses an alkaline sulfide solution containing sodium hydroxide and sodium sulfide for a cooking liquor.

(107) "Large appliances" means doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners and other similar products. Not included are products of such weight that they are normally lifted only with powered lifting equipment or products which are intended to be permanently fastened in place.

(108) "Leaking component" means any component at a petroleum refinery which has a VOC concentration exceeding 10,000 ppm when tested in the manner approved by the department.

(109) "Light-duty trucks" means any motor vehicles rated at 3864 kilograms (8500 pounds) gross weight or less which are designed primarily for the purpose of transporting goods and materials, or derivatives of such vehicles.

(110) "Liquid-mounted seal" means a primary floating roof seal mounted in continuous contact with the liquid in a liquid organic compound storage tank between the tank wall and the floating roof around the internal circumference of the tank.

(111) "Liquid service" means petroleum refinery equipment which processes, transfers or contains a VOC or mixture of VOCs in the liquid phase.

(112) "Loading rack" means an aggregation or combination of gasoline loading equipment arranged so that all loading outlets in the combination can be connected to a tank truck or trailer parked in a specific loading space.

(113) "'Lower explosive limit' or 'LEL'" means the lower limit of flammability of a gas or vapor at ordinary ambient temperatures expressed as percent propane in air by volume.

(114) "Low solvent coating or ink" means a coating or ink which contains less organic solvent than the conventional coatings used by the particular industry. Low solvent coatings or inks include water-borne, higher solids, electrodeposition and powder coatings or inks.

(115) "Magnet wire coating" means the process of applying a coating of electrically insulating varnish or enamel to aluminum or copper wire for use in electrical machinery.

(116) "Manufacturing plant" means a facility where parts are manufactured, finished or assembled for eventual inclusion into a finished product ready for sale to retailers. With respect to the manufacture of motor vehicles, customizers, body shops and other repainters are not included in this definition.

(117) "Mobile source" means any motor vehicle or equipment other than a semistationary source which is capable of emitting any air contaminant while moving (e.g., automobile, bulldozer, bus, locomotive, motorboat, motorcycle, snowmobile, steamship, truck, etc.).

(118) "Modification" means any change in physical size or method of operation of a stationary or portable source which increases the amount of any air contaminant emitted except that:

(a) Routine maintenance and repair shall not be considered physical changes.

(b) The following shall not be considered changes in method of operation unless the change will cause or exacerbate a violation of any ambient air quality standard.

1. An increase in production rate if such increase does not exceed the operating design capacity of the stationary source.

2. An increase in the hours of operation.

3. Use of an alternate fuel or raw material.

4. Resumption of operation of existing equipment after a period of closure.

(119) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes which may be supplemented by fillers and toners.

(120) "New direct or portable source" means a direct or portable source, the construction or modification of which is commenced after April 1, 1972, or the effective date of promulgation of an emission limit which applies.

(121) "New indirect source" means an indirect source, the construction or modification of which is commenced after July 1, 1975.

(122) "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide.

(123) "Noncondensibles" means gases and vapors from processes that are not condensed with the equipment used in those processes.

(124) "Opacity" means the state of a substance which renders it partially or wholly impervious to rays of light. (20% opacity equals one unit on the Ringlemann Chart.)

(125) "Open burning" means oxidation from which the products of combustion are emitted directly into the ambient air without passing through a stack or chimney.

(126) "Open top vapor degreasing" means the batch process of cleaning and removing soils from metal surfaces by condensing hot solvent vapor on the colder metal parts.

(127) "Operator" means any person who leases, controls, operates or supervises a facility, an air contaminant source, or air pollution control equipment.

(128) "Organic compound" means a compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate.

(129) "Oven" means, for the purpose of surface coating, a chamber within which heat is used to bake, cure, polymerize, or dry a surface coating.

(130) "Overall emission reduction efficiency" means the weight per unit time of an air contaminant removed by a control device divided by the weight per unit time of the air contaminant generated by the source, expressed as a percentage.

(131) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(132) "Ozone season" means the period from May 1 through September 30 of any year.

(133) "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, or other substrates,

which in subsequent operations are formed into packaging products or labels for articles to be sold.

(134) "Paper coating" means application of the uniform coatings put on paper and pressure sensitive tape regardless of substrate. Related web coating processes on plastic fibers and on metal foil are included in this definition but processes such as printing where the coating is not uniform across the web are not included.

(135) "Parking capacity" means the maximum number of vehicles which a parking facility is designed to hold based on an allotment of not more than 350 square feet of stall and aisle area per vehicle.

(136) "Particulate asbestos material" means any finely divided particles of asbestos material.

(137) "Particulate or particulate matter" means:

(a) For an existing direct or portable source, any material which exists as a solid at standard conditions.

(b) For a new direct or portable source, any material which exists as a solid or liquid at standard conditions except uncombined water.

(138) "'Parts per million' or 'ppm'" means parts of a contaminant per million parts of gas by volume.

(139) "Passenger type tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to 50.8 cm (20 inches) and cross section dimension up to 32.5 cm (12.8 inches).

(140) "Peak hour volume" means the highest one-hour traffic volume in a calendar year.

(141) "Penetrating prime coat" means an application of low-viscosity liquid asphalt to an absorbent surface to prepare it for an asphalt surface.

(142) "Performance test" means measurements of emissions or other procedures used for the purpose of determining compliance with a standard of performance.

(143) "Person" means any individual, corporation, company, cooperative, owner, tenant, lessee, syndicate, partnership, co-partnership, firm, association, trust, estate, public or private institution, joint stock company, political subdivision of the state of Wisconsin, state agency, or any legal successor, representative, agent or agency of the foregoing.

(144) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale, coal and coke.

(145) "Petroleum liquid" means crude petroleum, petroleum, condensate and any finished or intermediate products manufactured or extracted in a petroleum refinery or in a facility which produces oils from tar sands, shale, coal or coke.

(146) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants or other products through distillation of petroleum or through redistilla-

tion, cracking, extraction or reforming of unfinished petroleum derivatives.

(147) "Photochemically reactive organic substances" means any of the following:

(a) Group A: Hydrocarbons, alcohols, aldehydes, esters, ethers or ketones, which have olefinic or cyclo-olefinic type unsaturation.

(b) Group B: Aromatic compounds with 8 or more carbon atoms to the molecule, except ethylbenzene.

(c) Group C: Ethylbenzene, toluene, or ketones having branched hydrocarbon structures.

(d) Group D: A solvent or mixture of organic compounds in which any of the following conditions are met:

1. More than 20% of the total volume is composed of any combination of compounds listed in groups A, B or C above.

2. More than 5% of the total volume is composed of any combination of the compounds listed in group A above.

3. More than 8% of the total volume is composed of any combination of the compounds listed in group B above.

(148) "Pneumatic rubber tire manufacture" means the production of pneumatic rubber passenger type tires on a mass production basis.

(149) "Portable source" means any facility, installation, operation or equipment which may directly result in the emission of any air contaminant only while at a fixed location but is capable of being transported to a different location (e.g., portable asphalt plant, portable package boiler, portable air curtain destructor, etc.). A modified portable source or a source which has never received a plan approval shall be considered to be a direct stationary source which is subject to the requirements of ss. NR 154.04 and NR 154.05.

(150) "Prime coat" means the first film of coating applied to a product in a multiple-coat surface coating operation.

(151) "Printed interior panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

(152) "Process gas" means any gas generated by a petroleum refinery process unit except fuel gas and process upset gas as defined in this section.

(153) "Process line" means one or more actions or unit operations which must function simultaneously or in sequence in order to manufacture or modify a product (e.g. a spray booth, conveyor and drying oven are considered a process line).

(154) "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of start-up, shut-down, upset or malfunction.

(155) "Process weight" means the total weight of all materials introduced into any direct source operation, except liquid fuels, gaseous fuels and air.

(156) "Production equipment exhaust system" means a device for collecting and directing out of the work area fugitive emissions from reactor openings, centrifuge openings, and other vessel openings at a pharmaceutical manufacturing plant.

(157) "Proportional sampling" means sampling at a rate that produces a constant ratio of flow in the sampling nozzle to stack gas flow rate.

(158) "Psia" means pounds per square inch absolute.

(159) "Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

(160) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(161) "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.

(162) "'Reasonably available control technology' or 'RACT'" means that which provides the lowest emission rate that a particular source is capable of achieving by the application of control technology that is reasonably available considering technological and economic feasibility. Such technology may previously have been applied to similar, but not necessarily identical, source categories.

(163) "Refinery process unit" means any segment of a petroleum refinery in which a specific processing operation is conducted.

(164) "Reid vapor pressure" means the absolute vapor pressure of volatile crude petroleum and volatile nonviscous petroleum liquids except liquefied petroleum gases as determined by ASTM-D-232-72 (reapproved 1977).

(165) "Ringlemann Chart" means the chart published by the U.S. bureau of mines in which are illustrated graduated shades of grey to black for use in estimating the shade or density of smoke. (One unit on the Ringlemann Chart equals 20% opacity).

Note: See Ringlemann Chart published December, 1950, by the U.S. bureau of mines. Copies of "Fundamentals of Smoke Abatement," December, 1950, Ringlemann Chart, Information Circular 7588, are available for inspection at the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin, and may be obtained for personal use from the U.S. department of interior, Washington, D.C.

(166) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(167) "Roll printing" means the application of words, designs or pictures to a substrate, usually by means of a series of hard rubber or steel rolls each with only partial coverage.

(168) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is transferred to the substrate from the recessed areas on the coating roll.

(169) "Rotogravure printing" means the application of words, designs or pictures to a substrate by means of a roll printing technique which involves an intaglio or recessed image areas in the form of cells.

(170) "Secretary" means the secretary of the department of natural resources, state of Wisconsin.

(171) "Semistationary source" means any facility, operation or equipment that has the capability of emitting any air contaminant while moving, but generally does not emit while moving (e.g., diesel cranes, air compressors, and electric generators such as those used at construction sites, etc.).

(172) "Separation operation" means a process that separates a mixture of compounds and solvents into 2 or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization.

(173) "Shutdown" means the cessation of operation of a direct or portable source or of emission control equipment.

(174) "Silt content" means that portion by weight of a particulate material which will pass through a no. 200 (75 micron) wire sieve as determined by the dry method in ASTM C136-76 or other method approved by the department.

(175) "Single coat" means a single film of coating applied directly to a metal substrate, omitting the primer application.

(176) "Smoke" means all products of combustion of sufficient density to be observable, including but not limited to carbon, dust, fly ash, and other particles, but not including uncombined water.

(177) "Solvent" means organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents.

(178) "Solvent metal cleaning" means the process of cleaning soils from metal surfaces by cold cleaning or open top vapor degreasing or conveyORIZED degreasing.

(179) "Splash filling" means the filling of a tank truck or stationary storage tank through a pipe or hose whose discharge opening is more than 15.2 centimeters (6 inches) above the bottom of the tank being filled.

(180) "Stack" means any device or opening designed or used to emit air contaminants to the ambient air.

(181) "Standard conditions" means a temperature of 20°C (68°F) and a pressure of 760 millimeters of mercury (29.92 inches of mercury).

(182) "'Standard metropolitan statistical area' or 'SMSA'" means such area as designated by the U.S. bureau of budget in the following publication: *Standard Metropolitan Statistical Areas*, issued in 1967,

with subsequent amendments. The following Wisconsin counties are included in SMSA's:

(a) Appleton-Oshkosh, Wisconsin SMSA:

1. Calumet county
2. Outagamie county
3. Winnebago county

(b) Duluth-Superior, Minnesota-Wisconsin SMSA: Douglas county

(c) Eau Claire, Wisconsin SMSA:

1. Eau Claire county
2. Chippewa county

(d) Green Bay, Wisconsin SMSA: Brown county

(e) Kenosha, Wisconsin SMSA: Kenosha county

(f) La Crosse, Wisconsin SMSA: La Crosse county

(g) Madison, Wisconsin SMSA: Dane county

(h) Milwaukee, Wisconsin SMSA:

1. Milwaukee county
2. Ozaukee county
3. Washington county
4. Waukesha county

(i) Minneapolis-St. Paul, Minnesota-Wisconsin SMSA: St. Croix county

(j) Racine, Wisconsin SMSA: Racine county

Note: See *Standard Metropolitan Statistical Areas*, Revised Edition, 1976, executive office of the President, office of management and budget. Copies of this publication are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin, or may be obtained for personal use from the superintendent of documents, U.S. government printing office, Washington, D.C., 20402.

(183) "Startup" means the setting in operation of an affected facility or its emission control equipment for any purpose which produces emissions.

(184) "Stationary source" means any facility, building, structure, installation, or action, or combination thereof which may directly or indirectly result in the emission of any air contaminant at a fixed location.

(185) "Submerged fill pipe" means any fill pipe with a discharge opening which is entirely submerged when the liquid level is 15.2 centimeters (6 inches) above the tank bottom.

(186) "Surface coating" means the application of a coating to a product in a coating line.



(187) "Synthesized pharmaceutical manufacturing" means manufacture of pharmaceutical products by chemical synthesis.

(188) "Technological infeasibility" means incapable of being accomplished or carried out as a matter of practicality; i.e., technically impracticable rather than technically impossible.

(189) "Thin particleboard" means a manufactured board 0.64 centimeters (1/4 inch) or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

(190) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(191) "Tileboard" means paneling that has a colored waterproof surface coating.

(192) "Topcoat" means the final film of coating applied in a multiple coat operation.

(193) "'Total reduced sulfur' or 'TRS'" means any sulfur containing compound in which the oxidation state of sulfur is less than zero. Common examples of such compounds are hydrogen sulfide, mercaptans, and dimethyl disulfide.

(194) "Traffic volume" means the number of vehicles that pass a particular point on the roadway during a specific time period. Volume can be expressed in terms of daily traffic or annual traffic as well as on an hourly basis.

(195) "Transfer efficiency" means the portion of coating solids which adheres to the surface being coated during the application process, expressed as a percentage of the total volume of coating solids delivered to the applicator.

(196) "Tread end cementing" means the application of a solvent based cement to tire tread ends.

(197) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2617, *Evaporation Loss from Floating Roof Tanks*, 1962.

(198) "Turnaround" means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and putting the unit back on stream.

(199) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(200) "Uncombined water" means water not chemically or physically bound to another materials.

(201) "Undertread cementing" means the application of a solvent based cement to the underside of a tire tread.

(202) "Vacuum producing system" means any reciprocating, rotary, or centrifugal blower or compressor, or any jet ejector or device that takes suction from a pressure below atmospheric and discharges against atmospheric pressure.

(203) "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

(204) "Vapor collection system" means, for the purpose of liquid organic compound transfer operations, a vapor transport system which uses direct displacement by the liquid loaded to force vapors from the tank into a vapor control system or vapor holding tank.

(205) "Vapor-mounted seal" means any primary floating roof seal mounted so that there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

(206) "Vapor recovery or control system" means a system that gathers organic compound vapors released during the operation of any transfer, storage, or process equipment and processes the vapors so as to prevent their emission into the ambient air.

(207) "Vinyl coating" means applying a decorative or protective top-coat or printing on vinyl coated fabric or vinyl sheets.

(208) "Volatile organic compound" or "VOC" means any compound of carbon that has a vapor pressure greater than 0.1 millimeter of mercury (0.0019 psia) at standard conditions, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

(209) "Wastewater (oil-water) separator" means any device or piece of equipment which utilizes the difference in density between oil and water to remove oil and associated chemicals from water. This includes any device, such as a flocculation tank, clarifier, etc., which removes petroleum derived compounds from wastewater.

(210) "Water based sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for all organic solvents.

(211) "Waxy, heavy pour crude petroleum" means a crude petroleum with a pour point of 10°C (50°F) or higher as determined by the ASTM standard D97-66, "Test For Pour Point of Petroleum Oils."

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72, renum. (41) (a) 8 to be (41) (c); am. (41) (c) 3. and 4., Register, December, 1972, No. 204, eff. 1-1-73; r. and recr., Register, June, 1976, No. 234, eff. 7-1-76; renum. (3) (b) and (c) to be (3) (c) and (d), renum. (3) (a) 3. to be (3) (b) and am., am. (38) (intro.), Register, April, 1977, No. 266, eff. 5-1-77; r. and recr., Register, July, 1979, No. 283, eff. 8-1-79; am. Register, March, 1981, No. 303, eff. 4-1-81.

**NR 154.02 Applicability, delayed compliance, variances.** (1) **APPLICABILITY.** The provisions of this chapter govern the release of air contaminants to the ambient air and the regulation of air contaminant sources by the department.

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(2) **DELAYED COMPLIANCE ORDERS.** The department may, by order issued under s. 144.35 (1) (b), [144.423 (1) (b)] Stats., authorize a source not in compliance with an emission limitation prescribed in this chapter to achieve compliance as expeditiously as practicable but not later than 3 years after such requirement became applicable. The department shall hold a public hearing in accordance with its rules prior to authorizing any period of delayed compliance which exceeds 30 days in duration. No such order shall be issued unless:

(a) The cause of the violation was a malfunction, equipment failure, act of God, or some other condition beyond the entity's control, when using all prudent planning;

(b) The air contaminant source is located so that it will not delay attainment or affect maintenance of an ambient air quality standard at any point beyond the property line of the entity;

(c) Good faith efforts have been made to comply with this chapter;

(d) If the violation was caused by a malfunction or equipment failure, any plan required to be prepared by NR 154.06 (9) was compiled with;

(e) The air contaminant for which a deferral is sought is not a hazardous pollutant for which an emission standard has been established by the administrator of the U.S. environmental protection agency.

(f) The conditions listed in NR 154.09 (1), if applicable, are met;

(g) The order contains:

1. An express provision whereby the order recipient consents to its issuance;

2. A requirement that the order recipient employ reasonable emission monitoring techniques to assess compliance with any interim requirements imposed by the order;

3. A requirement for submittal of reports showing whether any interim requirements, increments of progress, and final compliance have been achieved;

4. A provision prohibiting the reduction of employe wages where supplemental, intermittent or other dispersion-dependent control methods are to be used;

5. In the case of a major stationary source, a notice that it may be required to pay administrative noncompliance penalties for failure to comply with the order and that no order issued under this subsection shall be effective until it is approved by the administrator of the U.S. environmental protection agency or designee.

(h) All reasonably available alternative operating procedures and interim control measures to minimize emissions shall be utilized by the air contaminant source during the period of delayed compliance.

(3) **RACT VARIANCES.** (a) The department may grant source-specific revisions to the state implementation plan setting alternate compliance schedules or alternate emission limitations, or both, where compliance with general RACT requirements of this chapter are shown to be technologically or economically infeasible, provided that:

1. The revision will not delay attainment or prevent maintenance of any ambient air quality standard, as determined by methods acceptable to the department.

2. Construction or modification of the air contaminant source for which a revision is requested was commenced on or before October 1, 1979.

3. The owner or operator of the air contaminant source for which a revision is requested demonstrates that all direct or portable sources owned or operated in the state by such person are in compliance with all applicable requirements of this chapter or are on a schedule for compliance with such requirements.

4. The owner or operator submits to the department information concerning the conditions or special circumstances which demonstrates, to the department's satisfaction, that the applicable general RACT requirements from which variance is sought are technologically or economically infeasible. In addition,

a. Where an alternate compliance schedule is sought, the owner or operator shall submit a proposed schedule which demonstrates reasonable further progress and contains a date for final compliance as soon as practicable.

b. Where alternate emission limitations are sought, the owner or operator shall submit proposed emission limitations.

5. Achieve final compliance with the applicable emission limitations and so certify to the department within 3 months of completion of construction or commencement of operation using new fuel.

6. Notwithstanding the increments of progress specified in this paragraph, all boilers to which par. (a) applies shall achieve final compliance and so certify to the department on or before December 31, 1982.

**History:** Cr. Register, March, 1972, No. 195, eff. 4-1-72; cr. (3), Register, June, 1975, No. 234, eff. 7-1-75; cr. (2) (c), Register, April, 1976, No. 244, eff. 5-1-76; cr. (5), Register, November, 1979, No. 287, eff. 12-1-79; cr. (4), Register, January, 1980, No. 289, eff. 2-1-80.

**NR 154.13 Control of organic compound emissions.** (1) **GENERAL LIMITATIONS.** (a) No person shall cause, allow or permit organic compound emissions into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution.

(b) No person shall 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, solvents or mixtures. Such precautions shall include, but are not limited to:

1. Use of caution to prevent spillage or leakage when filling tanks, trucks or trailers.

2. Use of caution when filling automobile tanks to prevent spillage.

(c) **Disposal of VOC wastes.** 1. Effective August 1, 1979, no person shall cause, allow, or permit the disposal of more than 5.7 liters (1.5 gallons) of any liquid VOC waste, or of any liquid, semisolid or solid waste materials containing more than 5.7 liters (1.5 gallons) of any VOC, in any one day from a facility in a manner that would permit their evaporation into the ambient air during the ozone season. This includes, but is not limited to, the disposal of VOC which must be removed from VOC control devices as so to maintain the control devices at their required operating efficiency.

2. Disposal during the ozone season shall be by methods approved by the department, such as incineration, recovery for reuse, or transfer in closed containers to an acceptable disposal facility, such that the quantity of VOC which evaporates into the ambient air does not exceed 15% (by weight) or 5.7 liters (1.5 gallons) in any one day, whichever is larger.

(2) **STORAGE OF ORGANIC COMPOUNDS.** (a) **Storage of petroleum liquids.** 1. **Applicability.** a. The storage, monitoring and maintenance requirements of subds. 2., 3. and 4. apply to all storage vessels for petroleum liquids of more than 151,412 liter (40,000 gallon) capacity on which construction or modification is commenced after July 1, 1975, with the exception of:

1) Storage vessels being used for number 2 through number 6 fuel oils as specified in ASTM-D-396-73, gas turbine fuel oils numbers 2-GT through 4-GT as specified in ASTM-D-2880-71, or diesel fuel oils numbers 2-D and 4-D as specified in ASTM-D975-73.

**Note:** See American Society for Testing and Materials, Part 17, 1973. Copies of applicable standards from Part 17; Petroleum Products - Fuels, Solvents, Burner Fuel Oils, Lubricating Oils, Cutting Oils, Lubricating Greases, Hydraulic Fluids; are available for inspection at the offices of the department of natural resources, secretary of state and revisor of statutes,

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Madison, Wisconsin, and may be obtained for personal use from ASTM, 1916 Race Street, Philadelphia, PA 19103.

2) Storage vessels for the crude petroleum or condensate stored, processed or treated at a drilling and production facility outside a standard metropolitan statistical area prior to custody transfer.

3) Pressure vessels which are designed to operate at pressures in excess of 104 kPa (15 psig) without emissions except under emergency conditions.

4) Subsurface caverns or porous rock reservoirs.

5) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

b. Effective July 1, 1980, the maintenance requirements of subd. 4. apply to all storage vessels for petroleum liquids of more than 7,571 liter (2,000 gallon) capacity.

c. Effective August 1, 1979, subd. 5. applies, subject to the provisions of sub. (12), to all fixed roof storage vessels with capacities greater than 151,412 liters (40,000 gallons) with the exception of those having capacities less than 1,600,000 liters (416,000 gallons) used to store crude petroleum and condensate prior to custody transfer.

d. Effective April 1, 1981, subd. 6. applies, subject to the provisions of sub. (12) (d) or (e), to all storage vessels equipped with external floating roofs having capacities greater than 151,412 liters (40,000 gallons) with the exception of:

1) Storage vessels having capacities less than 1,500,000 liters (396,270 gallons) used to store crude petroleum and condensate prior to custody transfer.

2) Storage vessels used to store waxy, heavy pour crude petroleum.

3) Storage vessels used solely for petroleum liquids with a true vapor pressure of less than 10.5 kPa (1.52 psia).

4) Storage vessels used solely for petroleum liquids with a true vapor pressure of less than 27.6 kPa (4.0 psia), and which are of welded construction, and presently possess a metallic-type shoe seal, a liquid-mounted foam seal, a liquid-mounted liquid filled type seal, or equally effective alternative control, approved by the department.

5) Storage vessels of welded construction, equipped with metallic-type shoe primary seal which has a secondary seal from the top of the shoe seal to the tank wall.

e. Effective April 1, 1981, subd. 7. applies to all storage vessels with capacities greater than 151,412 liters (40,000 gallons) equipped with external floating roofs without secondary seals or their approved equivalent.

2. Storage requirements. The owner or operator of any storage vessel to which this subdivision applies shall store petroleum liquids as follows:

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a. If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 10.5 kPa (1.52 psia) but not greater than 77 kPa (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system or their equivalents.

b. If the true vapor pressure of the petroleum liquid, as stored, is greater than 77 kPa (11.1 psia) the storage vessel shall be equipped with a vapor recovery system or its equivalent.

3. Monitoring requirements. a. The owner or operator of any storage vessel to which this subdivision applies shall, for each such storage vessel, maintain a file of each type of petroleum liquid stored, the typical Reid vapor pressure of each type of petroleum liquid stored and the dates of storage. Dates on which the storage vessel is empty shall be indicated.

b. The owner or operator of any storage vessel to which this subdivision applies shall, for each such storage vessel, determine and record the average monthly storage temperature and true vapor pressure of the petroleum liquid stored at such temperature if:

1) The petroleum liquid has a true vapor pressure, as stored, greater than 3.5 kPa (0.51 psia) but less than 10.5 kPa (1.52 psia) and is stored in a vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

2) The petroleum liquid has a true vapor pressure, as stored, greater than 63 kPa (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

c. The true vapor pressure shall be determined by the procedures in API Bulletin 2517. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the department requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, that Reid vapor pressure may be used. For other liquids, supporting analytical data shall be made available on request to the department when typical Reid vapor pressure is used.

*Note: See American Petroleum Institute, Bulletin 2517 Evaporation Loss from Floating Roof Tanks, February, 1962. Copies of Evaporation Loss from Floating Roof Tanks are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin, and may be obtained for personal use from the American Petroleum Institute, 2101 L Street, N.W., Washington, D. C. 20001.*

4. Maintenance requirements. No person shall place, hold or store in a storage vessel any petroleum liquid which has a true vapor pressure as stored greater than 10.5 kPa (1.52 psia) unless:

a. Any tank surface exposed to the rays of the sun is painted and maintained white so as to prevent excessive temperature and vapor pressure increases; and

b. The seals of any floating roof are maintained so as to minimize emissions; and

c. All gauging and sampling devices are vapor-tight except when gauging or sampling is taking place.

5. Storage in vessels with fixed roofs. No owner or operator of a fixed roof storage vessel to which this subdivision applies shall permit such storage vessel to be used for storing any petroleum liquid which has a true vapor pressure as stored greater than 10.5 kPa (1.52 psia), unless:

a. The vessel has been retrofitted with an internal floating roof equipped with a closure seal, or seals, to close the space between the roof edge and tank wall; or

b. The vessel has been retrofitted with equally effective alternative control, approved by the department; and

c. The vessel is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; and

d. All openings, except stub drains, are equipped with covers, lids, or seals such that:

1) The cover, lid or seal is in the closed position at all times except when in actual use; and

2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

3) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting; and

e. Routine inspections are conducted through roof hatches at monthly intervals during the ozone season; and

f. A complete inspection of cover and seal is conducted whenever the tank is emptied, though not more frequently than at 6 month intervals nor less frequently than at 8 year intervals; and

g. Records are maintained and retained for a minimum of 2 years that shall include:

1) The results of inspections conducted under subpars. e. and f.; and

2) The information required under subd. 3.a. and b. (intro).

6. Storage in vessels with external floating roofs. No owner or operator of a storage vessel equipped with an external floating roof to which this subdivision applies shall permit such storage vessel to be used for storing any petroleum liquid unless:

a. The vessel has been fitted with a continuous secondary seal extending from the floating roof to the tank wall, or the vessel has been fitted with an equally effective alternative control, approved by the department; and

b. The vessel is maintained such that all seal closure devices meet the following requirements:

1) There are no visible holes, tears, or other openings in the seal or any seal fabric or material;



2) The seal or seals are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall; and

3) For vapor mounted seals, the accumulated area of gaps exceeding 0.32 cm (1/8 in.) in width between the secondary seal and tank wall shall not exceed 21.2 cm<sup>2</sup> per meter (1.00 in.<sup>2</sup> per foot) of tank diameter; and

c. All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, are:

1) Equipped with covers, seals, or lids kept in the closed position except when in actual use; and

2) Equipped with projections into the tank which remain below the liquid surface at all times; and

d. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

e. Rim vents are set to open only when the roof is being floated off the leg supports or at the manufacturer's recommended setting; and

f. Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90% of the area of the opening; and

g. Routine visual inspections are conducted of all seals and seal closure devices at monthly intervals during the ozone season; and

h. The secondary seal gap of vapor-mounted seals is measured annually, in a manner approved by the department; and

i. Records are maintained and retained for a minimum of 2 years that shall include:

1) The results of inspections conducted under subpars. g. and h.; and

2) The information required under subd. 3.a. and b. (intro).

7. Additional monitoring. The owner or operator of a petroleum liquid storage vessel with an external floating roof not covered under subd. 6. but containing a petroleum liquid with a true vapor pressure greater than 7.0 kPa (1.0 psia), shall maintain and retain for at least 2 years records of the average monthly storage temperature, the type of liquid, throughput quantities and the maximum true vapor pressure for all petroleum liquids with a true vapor pressure greater than 7.0 kPa (1.0 psia).

(b) Storage of VOCs at pharmaceutical manufacturing facilities.

1. Applicability. Effective April 1, 1981, subd. 2. applies, subject to the provisions of sub. (12), to all storage vessels for VOCs of more than 3,785 liter (1,000 gallon) capacity at synthetic pharmaceutical manufacturing facilities.

2. Storage requirements. The owner or operator of any storage vessel shall install pressure-vacuum conservation vents set at  $\pm 0.2$  kPa, or an equally effective control device approved by the department, on all stor-

age vessels that store VOCs with vapor pressures in excess of 10.5 kPa (1.52 psia) at 21°C (70°F).

(c) Storage of any organic compound.

1. Applicability. a. Subd. 2. applies to all storage tanks for organic compounds having capacities greater than 151,412 liters (40,000 gallons) in the Southeastern Wisconsin Intrastate AQCR, and to all such storage tanks throughout the state on which construction or modification commenced after April 1, 1972, with the following exceptions:

1) Tanks storing organic compounds that are not photochemically reactive on which construction or modification commenced before August 1, 1979.

2) Tanks used exclusively for storing organic compounds exempted under sub. (13) (a).

(b) Where a provision of par. (a) also applies, the more stringent requirement shall be met.

2. Storage requirements. When storing organic compounds, solvents or mixtures having a vapor pressure greater than 10.5 kPa (1.52 psia) at 21°C (70°F), floating roofs, vapor condensation systems, vapor holding tanks, or equally effective alternative control methods approved by the department shall be used.

(3) TRANSFER OPERATIONS AND ASSOCIATED EQUIPMENT. (a) Bulk gasoline terminals.

1. Applicability. a. Effective August 1, 1979, subds. 2., 3., and 6. apply, subject to the provisions of sub. (12), to all bulk gasoline terminals and the associated equipment necessary to load tank truck or trailer compartments.

b. Effective April 1, 1981, subds. 4., 5. and 7. apply subject to the provisions of sub. (12), to all bulk gasoline terminals and the associated equipment necessary to load tank truck or trailer compartments, except that compliance with subd. 7. is required by the deadline stated therein.

2. Vapor control system. No person may load gasoline into any tank trucks or trailers from any bulk gasoline terminal unless:

a. The bulk gasoline terminal is equipped with a vapor control system which is properly installed, in good working order, in operation and consisting of one of the following:

1) An adsorber, absorption, refrigeration or condensation system; or

2) A vapor collection system which directs all vapors to a fuel gas system; or

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

b. All displaced vapors and gases are vented only to the vapor control system; and

c. A means is provided to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected; and

d. All loading and vapor lines are equipped with fittings which make vapor-tight connections and which close automatically when disconnected.

3. Emission limitation. The vapor control system required under subd. 2.a. shall not allow mass emissions of VOCs from control equipment to exceed 80 milligrams per liter (4.7 grains per gallon) of gasoline loaded.

4. Operating requirements. The vapor collection system and the gasoline loading equipment shall be designed and operated in a manner that prevents:

a. Gauge pressure from exceeding 4.5 kPa (18 inches of H<sub>2</sub>O) and vacuum from exceeding 1.5 kPa (6 inches of H<sub>2</sub>O) in the gasoline tank truck;

b. A reading equal to or greater than 100% of the LEL at 2.5 centimeters from all points on the perimeter of a potential leak source;

c. Avoidable visible liquid leaks during loading or unloading operations.

5. Repair deadline. Provisions shall be made to repair and retest a vapor collection or control system that exceeds the limits of subd. 4.b. within 15 days.

6. Precautions. Sources to which this paragraph applies shall not:

a. Allow gasoline to be discarded in sewers or stored in open containers, sub. (1) (c) notwithstanding; nor

b. Allow the pressure in the vapor collection system to exceed the tank truck or trailer pressure relief settings.

7. Truck sticker. After October 1, 1981, no person may load gasoline into any tank truck or trailer from any bulk gasoline terminal unless the tank truck displays a current sticker demonstrating that the truck is in compliance with par. (d).

(b) Bulk gasoline plants.

1. Applicability. a. Effective August 1, 1979, subds. 2., 3.a. and b., 4., 5. and 8. apply, subject to the provisions of sub. (12), to the loading and storage facilities of all bulk gasoline plants which have a 3 year average annual throughput of 1,330,000 liters (350,000 gallons) of gasoline or more; to the unloading, loading, and storage facilities of all bulk gasoline plants which have a 3 year average annual throughput of 3,800,000 liters (1,000,000 gallons) of gasoline or more; and to all delivery vessels involved in such loading or unloading operations, with the following exceptions:

1) The loading or unloading of stationary storage tanks with a capacity of 2,176 liters (575 gallons) or less, notwithstanding s. NR 154.06 (8).

2) Bulk plant unloading facilities, the delivery vessels receiving gasoline from bulk plants, and the operation of transferring gasoline from bulk plant to delivery vessel when the transfer takes place outside the counties of Brown, Calumet, Dane, Dodge, Fond du Lac, Jefferson, Kenosha, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha and Winnebago or when the gasoline is delivered exclusively to facilities exempted from the requirements of par. (c) by par. (c) 1.a.2) ; 4) , 5) , 6) or 7) . However, this paragraph does apply if gasoline is transferred during the ozone season to a delivery vessel whose last previous delivery was to a gasoline dispensing facility (either inside or outside of Wisconsin) which is required to have a vapor balance system.

b. Effective April 1, 1981, subds. 3.c., 6. and 7. apply, subject to the provisions of sub. (12), to all vapor collection systems and all gasoline loading equipment required under subd. 1.a., except that compliance with subd. 3.c. is required by the deadline stated therein.

2. Equipment requirements for bulk plants. No owner or operator of a bulk gasoline plant shall permit stationary storage tanks to load or unload gasoline unless each tank is equipped with a vapor balance system as described under subd. 5. and approved by the department; and

a. Each tank is equipped with a submerged fill pipe approved by the department; or

b. Each tank is equipped with a fill line whose discharge opening is flush with or near the bottom of the tank.

3. Equipment requirements for delivery vessels. No owner or operator of a bulk gasoline plant or delivery vessel shall permit the gasoline transfer operations regulated under this paragraph unless each delivery vessel involved in such operations is equipped with a vapor balance system as described under subd. 5. and approved by the department; and

a. Equipment is available at the bulk gasoline plant to provide for the submerged filling of each delivery vessel; or

b. Each delivery vessel is equipped for bottom filling, and

c. After October 1, 1981, the tank truck displays a current sticker demonstrating that the truck is in compliance with par. (d).

4. Transfer requirements. No owner or operator of a bulk gasoline plant or delivery vessel shall permit the transfer of gasoline unless:

a. Submerged or bottom filling is used; and

b. The vapor balance system is in good working order and is connected and operating; and

c. Delivery vessel hatches are closed at all times during transfer operations; and

d. There are no leaks in the delivery vessels' pressure-vacuum relief valves and hatch covers, nor in the delivery vessel tanks or stationary storage tanks or associated vapor and liquid lines during loading or unloading; and

e. The pressure relief valves on stationary storage tanks and delivery vessels are set to release at no less than 4.8 kPa (0.7 psig), or the highest possible pressure consistent with state or local fire codes or the national fire prevention association guidelines.

5. Vapor balance system. Vapor balance systems required under subds. 2. and 3. shall include vapor space connections on the stationary storage tank and on the delivery vessel with connecting pipe or hose. These connections are required either for loading of the bulk plant storage tank only or for both loading and unloading, as indicated in subd. 1. Both sides of all junctions shall be equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of organic compound vapors.

6. Operating requirements. The vapor collection system and the gasoline loading equipment shall be designed and operated in a manner that prevents:

a. Gauge pressure from exceeding 4.5 kPa (18 inches of H<sub>2</sub>O) and vacuum from exceeding 1.5 kPa (6 inches of H<sub>2</sub>O) in the gasoline tank truck;

b. A reading equal to or greater than 100% of the LEL at 2.5 centimeters from all points on the perimeter of a potential leak source;

c. Avoidable visible liquid leaks during loading or unloading operations.

7. Repair deadline. Provisions shall be made to repair and retest a vapor collection or control system that exceeds the limits of subd. 6.b. within 15 days.

8. Precautions. Notwithstanding sub. (1) (c), no owner or operator of a bulk gasoline plant shall permit gasoline to be spilled, discarded in sewers or stored in open containers.

(c) Gasoline dispensing facilities. 1. Applicability. a. Effective August 1, 1979, subds. 2.a. and b., 3., 5., 6., 7.a. and b., 8. and 9. apply, subject to the provisions of sub. (12), to gasoline dispensing facilities, to the delivery vessels used to bring these facilities the gasoline which they dispense, and to the operation of transferring gasoline to the dispensing facilities with the following exceptions:

1) Gasoline dispensing facilities which are supplied exclusively by bulk gasoline plants whose unloading operations are exempted from the requirements of par. (b) by par. (b) 1.a.

2) Gasoline dispensing facilities located outside the counties of Brown, Calumet, Dane, Dodge, Fond du Lac, Jefferson, Kenosha, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha and Winnebago.

3) Delivery vessels used exclusively to supply exempt gasoline dispensing facilities or used exclusively for the transfer operations exempted under 4) through 6) below.

4) Transfers made to storage tanks of gasoline dispensing facilities equipped with floating roofs or their equivalent which have been approved by the department.

5) Transfers made to any stationary storage tank at a gasoline dispensing facility with a capacity of 7,580 liters (2,000 gallons) or less which is in place on or before August 1, 1979.

6) Transfers made to any stationary storage tank at a gasoline dispensing facility with a capacity of 2,176 liters (575 gallons) or less which is installed after August 1, 1979.

b. Effective April 1, 1981, subds. 2.c., 4. and 7.c. apply, subject to the provisions of sub. (12), to all vapor collection systems and all gasoline loading equipment as required under subd. 1.a., except that compliance with subd. 2.c. is required by the deadline stated therein.

2. Vapor control requirements. No owner or operator of a gasoline dispensing facility and no owner of a gasoline storage tank at such a facility shall transfer or cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank not excluded under subd. 1. unless:

a. The storage tank is equipped with a submerged fill pipe, and

b. The vapors displaced from it by filling are processed by a vapor control system in accordance with subd. 3., and

c. After October 1, 1981, the tank truck displays a current sticker demonstrating that the truck is in compliance with par. (d).

3. Vapor control system. The vapor control system required by subd. 2. shall include one or more of the following:

a. A vapor balance system with a vapor-tight vapor return line from the storage tank to the delivery vessel and a system that will ensure the vapor line is connected before gasoline can be transferred into the storage tank; or

b. A refrigeration-condensation system or equivalent capable of recovering at least 90% by weight of the organic compounds in the displaced vapor; or

c. A system demonstrated to have control efficiency equivalent to or greater than that provided under subpars. a. or b. and approved by the department.

4. Operating requirements. The vapor collection system and the gasoline loading equipment shall be designed and operated in such a manner that prevents:

a. Gauge pressure from exceeding 4.5 kPa (18 inches of H<sub>2</sub>O) and vacuum from exceeding 1.5 kPa (6 inches of H<sub>2</sub>O) in the gasoline tank truck;

b. A reading equal to or greater than 100% of the LEL at 2.5 centimeters from all points on the perimeter of a potential leak source;

c. Avoidable visible liquid leaks during loading or unloading operations.

5. Delivery vessel unloading. The operator of a delivery vessel shall not commence transfer of gasoline to any gasoline dispensing facility equipped with a vapor balance system pursuant to subd. 3.a. without

first properly connecting the vapor return line. The delivery vessel shall be designed, maintained and operated to be vapor tight at all times that it is vapor-laden.

6. Delivery vessel refilling. During the ozone season, vapor-laden delivery vessels shall be refilled in Wisconsin only at:

a. Bulk gasoline terminals complying with par. (a); or

b. Bulk gasoline plants equipped with a vapor balance system for unloading as described in par. (b) 5.

7. Control equipment installation and maintenance. Each owner of a gasoline storage tank or delivery vessel shall:

a. Install all necessary control systems and make all necessary process modifications in accordance with subds. 2., 3., 4. and 5. of par. (c); and

b. Repair, replace or modify any worn out or malfunctioning component or element of design, and keep such records as may be requested in writing by the department relating to the repair, replacement or modification of any component or element of design of the control system.

c. Repair and retest a vapor collection or control system that exceeds the limits of subd. 4.b. within 15 days.

8. Control equipment operating and maintenance instructions. Each owner of a gasoline storage tank shall provide written instructions to the operator of the gasoline dispensing facility describing necessary operating and maintenance procedures and procedures for prompt notification of the owner in case of any malfunction of the control system.

9. Operation and maintenance requirement. Each operator of a gasoline dispensing facility shall:

a. Maintain and operate the control system in accordance with the specifications and the operating and maintenance procedures specified by the owner; and

b. Promptly notify the owner of the control system of any scheduled maintenance or of any malfunction requiring replacement or repair of major components of the system; and

c. Keep on the premise a copy of the instructions provided pursuant to subd. 8. and make these instructions available to an authorized representative of the department on request; and

d. Maintain such records on maintenance and malfunction as may be requested in writing by the department; and

e. Maintain gauges, meters, or other specified testing devices in proper working order.

(d) Gasoline delivery vessels.

1. Applicability. a. Effective April 1, 1981, subd. 2. applies, with compliance deadlines in accord with the compliance schedules for pars. (a), (b), and (c), to all gasoline delivery vessels except those exempted from vapor balance system installations under pars. (b) 1.a. and (c) 1.a.3).

2. Equipment requirements. Except as provided under subd. 1.a., the owner or operator of a gasoline delivery vehicle shall:

a. Provide for all gasoline delivery vessels to be equipped for gasoline vapor collection.

b. Provide for all loading and vapor lines to be equipped with fittings which make vapor-tight connections.

c. Equip vapor lines leading to the vapor space in the delivery vessel with fittings which close automatically when disconnected.

d. Demonstrate through the sticker required in subpar. e. that the gasoline delivery vessel is in compliance with the following provisions:

1) An annual pressure test shall be performed on the vessel;

2) The vessel shall sustain a pressure change of no more than 0.75 kPa (3 inches of H<sub>2</sub>O) in 5 minutes when pressurized to a gauge pressure of 4.5 kPa (18 inches of H<sub>2</sub>O) or evacuated to a gauge pressure of 1.5 kPa (6 inches of H<sub>2</sub>O) during the test required in 1); and

3) A vessel failing to meet the requirements of 2) shall be repaired and retested within 15 days.

e. Display a sticker near the department of transportation certification plate which:

1) Shows the date that the gasoline delivery vessel was last certified under subpar. d.;

2) Shows the identification number of the gasoline delivery vessel.

f. Design and operate the gasoline loading and unloading equipment in a manner that prevents:

1) A reading equal to or greater than 100% of the LEL at 2.5 centimeters from all points on the perimeter of a potential leak source; and

2) Avoidable visible liquid leaks during loading or unloading operations.

g. Repair and retest, within 15 days, components exceeding the limits of subpar. f.1).

3. Pressure test records. a. Maintain for a period of 3 years from the recording date a log for each delivery vessel containing, at a minimum,;

1) Company name and the date and location of test required under subd. 2.d.2),

2) Delivery vessel identification number,

3) Initial test pressure and time of reading,

4) Final test pressure and time of reading,

5) Initial test vacuum and time of reading, and

6) Final test vacuum and time of reading.



b. Annually submit to the department information as developed under subd. 2.d.2), and as recorded under subpars. a.1) through 6).

(e) Transfer of VOCs at pharmaceutical manufacturing facilities.

1. Applicability. Effective April 1, 1981, subd. 2. applies, subject to the provisions of sub. (12), to all storage vessels for VOCs of more than 7,751 liter (2,000 gallon) capacity at a synthetic pharmaceutical manufacturing facility.

2. Emission reduction requirements. No owner or operator of a synthetic pharmaceutical manufacturing facility shall permit the delivery of VOCs with vapor pressure in excess of 28.0 kPa (4.1 psia) at 20°C from a truck or railcar to the storage vessel unless a vapor balance or equivalent control system is provided. The system must be at least 90% effective in reducing emissions from transfer operations.

(f) Transfer of any organic compound.

1. Applicability. a. This paragraph applies to transfer operations in the Southeastern Wisconsin Intrastate AQCR involving organic compounds, solvents or mixtures having a vapor pressure greater than 10.5 kPa (1.52 psia) at 21°C (70°F), and to such transfer operations throughout the state at facilities on which construction or modification was commenced after April 1, 1972, with the following exceptions:

1) Transfer operations involving organic compounds which are not photochemically reactive at facilities on which construction or modification was commenced before August 1, 1979.

2) Transfer operations involving, exclusively, organic compounds exempted under par. (13) (a).

b. Where a provision elsewhere in sub. (3) also applies, the more stringent requirement shall be met.

2. Tank loading. For transfers to storage tanks having greater than 3,785 liter (1,000 gallon) capacity, a permanent submerged fill pipe shall be used, provided such a tank does not have controls mentioned in sub. (2) (b) 2.

3. Tank load out for high throughput facilities. At facilities with over 151,412 liters (40,000 gallons) per day throughput, a vapor collection and disposal system, vapor collection adaptors and vapor-tight seal, or an underfill method with the top hatches partially closed or a means of creating a slight back pressure when loading tank trucks or trailers shall be used.

4. Tank load out for low throughput facilities. At facilities with 151,142 liters (40,000 gallons) or less per day throughput, the underfill method or a submerged fill pipe extending to within 6 inches of the tank bottom shall be employed when loading tank trucks or trailers.

(4) SURFACE COATING AND PRINTING PROCESSES. (a) General applicability. This subsection applies to any facility which contains one or more of the surface coating or printing process lines described in this subsection, with the following exceptions:

1. Surface coating process lines whose emissions of VOCs are never greater than 6.8 kilograms (15 pounds) in any one day, and never greater than 1.4 kilograms (3 pounds) in any one hour.

2. Surface coating facilities covered under par. (m) which have total emissions of VOCs from all surface coating process lines, with all emission control equipment inoperative, of less than or equal to 10 tons per year.

3. Surface coating facilities covered under pars. (c) through (k) and par. (m) which are located outside the counties of Brown, Calumet, Dane, Dodge, Fond du Lac, Jefferson, Kenosha, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago and which have total emissions of VOCs from the facility, with all emission control equipment inoperative, of less than or equal to 100 tons per year.

4. Printing facilities covered under par. (1) which have total emissions of VOCs from the facility, with all emission control equipment inoperative, of less than or equal to 100 tons per year.

5. Surface coating process sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance where:

1) The operation of the source is not an integral part of the production process; and

2) The emissions from the source do not exceed 363 kilograms (800 pounds) in any calendar month; and

3) The exemption is approved in writing by the department.

(b) Methods of compliance. 1. General methods. The surface coating emission limitations shall be achieved by:

a. The application of low solvent content coating technology; or

b. A vapor recovery system which recovers the solvent for reuse; or

c. Incineration or catalytic oxidation, provided that 90% of the nonmethane VOCs (VOC measured as total combustible carbon) which enter the incinerator or oxidation unit are oxidized to non-organic compounds; or

d. An equivalent system or approach demonstrated to reliably control emissions to a level at or below the applicable emission limit and approved by the department.

2. High transfer efficiency coating application. a. Surface coating operations covered under pars. (g), (h), (i) and (m) have the added option of achieving compliance with the emission limitations through the use of a high transfer efficiency coating application system, either when used alone or in conjunction with low solvent content coating technology.

b. Compliance under the option provided in this subdivision must be demonstrated to the satisfaction of the department. This requires that:

1) The design, operation, and efficiency of the application system must be certified in writing by the owner or operator, and

2) The solvent usage per coated part for application system must be less than or equal to the solvent usage per coated part at the applicable emission limitation using baseline transfer efficiency.

3. Capture systems. The design, operation, and efficiency of any capture system used in conjunction with subd. 1.b., c. or d. shall be certified in writing by the owner or operator. The certification shall demonstrate that the applicable emission limitation will be achieved. The capture system is subject to approval by the department.

(c) Can coating. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to coating applicators and ovens of sheet, can or end coating lines involved in sheet basecoat (exterior and interior) and overvarnish; 2-piece can exterior (basecoat and overvarnish); 2- and 3-piece can interior body spray; 2-piece can exterior end (spray or roll coat); 3-piece can side-seam spray and end sealing compound operations. This paragraph does not apply to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a can coating line shall cause, allow or permit the emission of any VOCs in excess of:

a. 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to each coating applicator from sheet basecoat (exterior and interior) and overvarnish or 2-piece can exterior (basecoat and overvarnish) operations,

b. 0.51 kilograms per liter of coating (4.2 pounds per gallon), excluding water, delivered to each coating applicator from 2- and 3-piece can interior body spray and 2-piece can exterior end (spray or roll coat) operations,

c. 0.66 kilograms per liter of coating (5.5 pounds per gallon), excluding water, delivered to each coating applicator from 3-piece can side-seam spray operations, or

d. 0.44 kilograms per liter of coating (3.7 pounds per gallon), excluding water, delivered to each coating applicator from end sealing compound operations.

(d) Coil coating. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to the coating applicators, ovens and quench areas of coil coating lines involved in prime and top coat or single coat operations. This paragraph does not apply to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a coil coating line shall cause, allow or permit the emission of any VOCs in excess of 0.31 kilograms per liter of coating (2.6 pounds per gallon), excluding water, delivered to each coating applicator from prime and topcoat or single coat operations.

(e) Paper coating. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to the coating applicators, including but not limited to blade, air knife or roll coaters, and drying ovens of paper coating lines. This paragraph does not apply to

any piece of equipment on which a nonuniform coating is applied to a substrate, as in printing, or to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a paper coating line shall cause, allow or permit the emission of any VOCs in excess of 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to each coating applicator from a paper coating line.

(f) Fabric and vinyl coating. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to the coating applicators, including but not limited to blade, roll, rotogravure or dip coaters, and drying ovens of fabric and vinyl coating lines. This paragraph does not apply to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a fabric coating line or a vinyl coating line shall cause, allow or permit the emission of any VOCs in excess of:

a. 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to each coating applicator from a fabric coating line.

b. 0.45 kilograms per liter of coating (3.8 pounds per gallon), excluding water, delivered to each coating applicator from a vinyl coating line.

(g) Automobile and light-duty truck manufacturing. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12) (f), to the application areas, flashoff areas, and ovens of automobile and light-duty truck manufacturing plants involved in prime, topcoat and final repair coating of metallic front end and main body parts. This paragraph does not apply to the coating of wheels, trunk interiors, steering columns or nonmetallic parts; to sealers or non-priming anti-rust coatings; or to sources exempted under par. (a).

2. Emission limitations—enamels. No owner or operator of an automobile surface coating line which, prior to January 1, 1979, used an enamel coating system, shall cause, allow or permit the emission of any VOCs in excess of:

a. After December 31, 1983, 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, from an electrodeposition prime coat or equivalent coating line.

b. After December 31, 1982, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

c. After December 31, 1982, and until December 31, 1985, 0.45 kilograms per liter of coating (3.7 pounds per gallon), excluding water, from a topcoat coating line.

d. After December 31, 1985, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a topcoat coating line.

e. After December 31, 1982, 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, from any final repair coating line.

3. Emission limitations—lacquers. No owner or operator of an automobile surface coating line which, prior to January 1, 1979, used a lac-

quer coating system, shall cause, allow or permit the emission of any VOCs in excess of:

a. After August 1, 1979, and until December 31, 1982, 0.27 kilograms per liter of coating (2.2 pounds per gallon), excluding water, from an electrodeposition prime coat coating line.

b. After December 31, 1982, 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, from an electrodeposition prime coat coating line.

c. After December 31, 1980, and until December 31, 1986, 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

d. After December 31, 1986, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

e. After December 31, 1979, and until December 31, 1981, 0.70 kilograms per liter of coating (5.8 pounds per gallon), excluding water, from a topcoat coating line.

f. After December 31, 1981, and until December 31, 1986, 0.61 kilograms per liter of coating (5.0 pounds per gallon), excluding water, from a topcoat coating line.

g. After December 31, 1986, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a topcoat coating line.

h. After August 1, 1979, and until December 31, 1986, 0.79 kilograms per liter of coating (6.5 pounds per gallon), excluding water, from any final repair coating line.

i. After December 31, 1986, 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, from any final repair coating line.

4. Emission limitations--trucks. No owner or operator of a light-duty truck surface coating line shall cause, allow or permit the emission of any VOCs in excess of:

a. After January 1, 1981, and until December 31, 1982, 0.27 kilograms per liter of coating (2.2 pounds per gallon), excluding water, from an electrodeposition prime coat coating line.

b. After December 31, 1982, 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, from an electrodeposition prime coat coating line.

c. After December 31, 1980, and until December 30, 1987, 0.41 kilograms per liter of coating (3.4 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

d. After December 31, 1987, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

e. After December 31, 1982, and until December 30, 1987, 0.44 kilograms per liter of coating (3.6 pounds per gallon), excluding water, from a topcoat coating line.

f. After December 30, 1987, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a topcoat coating line.

g. After December 31, 1982, 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, from any final repair coating line.

5. Emission rate averaging. Each emission limit in this paragraph may be interpreted as a weighted daily average, or as an instantaneous arithmetic average of the colors in use, whichever is specified in an approved compliance plan. The emission limits are referenced to water-borne coatings conventionally applied. Any coating line which achieves an equivalent emission rate per unit area coated shall be deemed in compliance.

(h) Furniture metal coating. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to the application areas, flashoff areas, and ovens of furniture metal coating lines involved in prime and topcoat or single coating operations. This paragraph does not apply to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a furniture metal coating line shall cause, allow, or permit the emission of any VOCs in excess of 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to each coating applicator from prime and topcoat or single coat operations.

(i) Surface coating of large appliances. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to application areas, flashoff areas, and ovens of large appliance coating lines involved in single, prime, or topcoat coating operations. This paragraph does not apply to:

a. Sources exempted under par. (a); or

b. The use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 liters (1 quart) in any one 8-hour period for any appliance coating line.

2. Emission limitations. No owner or operator of a large appliance coating line shall cause, allow or permit the emission of any VOCs in excess of 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to each coating applicator from single, prime, or topcoat coating operations.

(j) Magnet wire coating. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to the ovens of magnet wire coating operations. This paragraph does not apply to sources exempted under par. (a).

2. Emission limitation. No owner or operator of a magnet wire coating oven shall cause, allow or permit the emission of any VOCs in excess of 0.20 kilograms per liter of coating (1.7 pounds per gallon), excluding water, delivered to each coating applicator from magnet wire coating operations.

(k) Flat wood panel coating. 1. Applicability. Effective April 1, 1981, this paragraph applies, subject to the provisions of sub. (12), to the coating lines of flat wood panel facilities involved in the surface coating

of printed interior panels made of hardwood plywood and thin particleboard, natural finish hardwood plywood panels, or hardboard paneling with class II finishes. This paragraph does not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component; or to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a flat wood panel coating line shall cause, allow, or permit the emission of any VOCs from a coating application system in excess of:

a. 2.9 kilograms per 100 square meters of coated finished product (6.0 pounds per 1,000 square feet) from printed interior panels, regardless of the number of coats applied;

b. 5.8 kilograms per 100 square meters of coated finished product (12.0 pounds per 1,000 square feet) from natural finish hardwood plywood panels, regardless of the number of coats applied; and

c. 4.8 kilograms per 100 square meters of coated finished product (10.0 pounds per 1,000 square feet) from class II finishes on hardboard panels, regardless of the number of coats applied.

(l) Graphic arts. 1. Applicability. Effective April 1, 1981, this paragraph applies, subject to the provisions of sub. (12), to the printing lines of all packaging rotogravure, publication rotogravure, and flexographic printing facilities. This paragraph does not apply to sources exempted under par. (a).

2. Emission limitations. No owner or operator of a packaging rotogravure, publication rotogravure, or flexographic printing line shall operate, or cause, allow or permit the operation of the line unless:

a. The volatile fraction of ink, as it is applied to the substrate, contains 25% by volume or less of organic solvent and 75% by volume or more of water;

b. The ink, as it is applied to the substrate, less water, contains 60% by volume or more nonvolatile material; or

c. The owner or operator installs and operates:

1) A vapor recovery system which reduces the VOC emissions from the capture system by at least 90% by weight;

2) An incineration or catalytic oxidation system, provided that 90% of the nonmethane VOCs (VOC measured as total combustible carbon) which enter the incinerator or oxidation unit are oxidized to non-organic compounds; or

3) An alternative VOC emission reduction system demonstrated to have at least a 90% reduction efficiency, as measured across the control system, and approved by the department.

3. The design, operation and efficiency of any capture system used in conjunction with subd. 2.c. shall be certified in writing by the owner or operator and is subject to approval by the department. The capture efficiency shall be at a minimum:

a. 75% where a publication rotogravure process is employed;

- b. 70% where a packaging rotogravure process is employed; or
- c. 65% where a flexographic printing process is employed.

(m) Miscellaneous metal parts and products.

1. Applicability. Effective April 1, 1981, this paragraph applies, subject to the provisions of sub. (12), to all coating line application areas, conveyors, flashoff areas, air and forced air driers, and ovens of any industry categorized under standard industrial classification codes of major groups 33 through 39 which are involved in the surface coating of miscellaneous metal parts and products with the following exceptions:

- a. Coating of airplane exteriors;
- b. Coating of marine vessel exteriors;
- c. Automobile refinishing;
- d. Customized topcoating of automobiles and trucks if production is less than 35 vehicles per day;
- e. Adhesives and materials used to prepare a surface for adhesives;
- f. Specialized coatings required by state or federal agencies;
- g. Sealants or fillers whose purpose is to seal or fill seams, joints, holes and minor imperfections of surfaces;
- h. Coating lines covered under pars. (c) through (j); or
- i. Sources exempted under par. (a).

2. Emission limitations—cured coatings. No owner or operator of a miscellaneous metal parts or products coating line using a baked or specially cured coating technology shall cause, allow, or permit the emission of any VOCs in excess of:

- a. 0.52 kilograms per liter (4.3 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies clear coatings;
- b. 0.42 kilograms per liter (3.5 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings; and
- c. 0.36 kilograms per liter (3.0 pounds per gallon) of coating, excluding water, delivered to a coating applicator for all other coatings.

3. Emission limitations—air dried coatings. No owner or operator of a miscellaneous metal parts or products coating line using an air dried coating technology shall cause, allow, or permit the emission of any VOCs in excess of:

- a. After December 31, 1982, 0.58 kilograms per liter (4.8 pounds per gallon) of any coating, excluding water, delivered to a coating applicator;
- b. After December 31, 1985, 0.52 kilograms per liter (4.3 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies clear coatings;



c. After December 31, 1985, 0.42 kilograms per liter (3.5 pounds per gallon) of coating, excluding water, delivered to a coating applicator for all other coatings.

4. Miscellaneous metal parts or products coating lines which, prior to January 1, 1980, used a baked or specially cured coating technology shall meet the emission limitations of subd. 2., notwithstanding the coating technology presently in use.

5. Multiple limitations. If more than one emission limitation in subd. 2. applies to a specific coating, then the least stringent emission limitation shall be applied.

6. Solvent washings. All VOC emissions from solvent washings shall be considered in the emission limitations in subds. 2. and 3., unless the used wash solvent is directed into containers that prevent evaporation into the atmosphere.

(5) USE OF ROAD SURFACING MATERIALS. (a) Cutback asphalts. 1. Applicability. This paragraph applies to the mixing, storage, use and application of cutback asphalts in Wisconsin. This paragraph does not apply to cutback asphalts intended for uses other than application to surfaces traversed by motor vehicles, bicycles or pedestrians.

2. Restricted materials. The following restrictions apply to the mixing, open storage, use or application of cutback asphalts during the ozone season:

a. After August 1, 1979, the use of rapid curing cutback asphalts shall not be permitted.

b. After May 1, 1980, the use of cutback asphalts for sealcoating operations shall not be permitted except where a single coat of liquid asphalt is applied to an aggregate base to control dust.

c. After May 1, 1981, the use of cutback asphalts shall not be permitted except for the aggregate base application allowed in subpar. b., and for use as a penetrating prime coat during the first and last months of the ozone season.

(b) Reserved.

(6) SOLVENT CLEANING OPERATIONS. (a) Solvent metal cleaning. 1. Applicability. Effective August 1, 1979, this paragraph applies, with a final compliance deadline of May 1, 1980, or as provided by a compliance schedule issued or approved pursuant to sub. (12) (e), to cold cleaning, open top vapor degreasing and conveyORIZED degreasing operations.

b. This paragraph does not apply to individual cold cleaners to which not more than 5.7 liters (1.5 gallons) of solvent is added per day or to individual open top vapor or conveyORIZED degreasers whose emissions of VOCs are not more than 6.8 kilograms (15 pounds) in any one day, nor more than 1.4 kilograms (3 pounds) in any one hour, provided:

1) The degreaser is located outside the counties of Brown, Calumet, Dane, Dodge, Fond du Lac, Jefferson, Kenosha, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha and Winnebago; and

2) The emission rates from open top vapor and conveyORIZED degreasers are determined and certified before October 1, 1979 in a manner approved by the department.

c. This paragraph also does not apply to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance where:

1) The operation of the source is not an integral part of the production process; and

2) The emissions from the source do not exceed 363 kilograms (800 pounds) in any calendar month; and

3) The exemption is approved in writing by the department.

d. The requirements of subd. 2.b. through g. do not apply to cold cleaners with an open area smaller than 0.1 square meter (1.1 square feet).

e. The requirements of subd. 3.c. do not apply to open top vapor degreasers with an open area smaller than 1.0 square meter (10.8 square feet).

f. The requirements of subd. 4.c. do not apply to conveyORIZED degreasers with an air-vapor interface smaller than 2.0 square meters (21.6 square feet).

2. Cold cleaners. Except as provided under subd. 1.b., c., and d., the owner or operator of a cold cleaning facility shall:

a. Equip the cleaner with a cover; and

b. Design the cover so that it can be easily operated with one hand if:

1) The solvent volatility is greater than 2 kPa (0.3 psia) measured at 38°C (100°F); or

2) The solvent is agitated; or

3) The solvent is heated; and

c. Equip the cleaner with a facility for draining cleaned parts, and the drainage facility shall be constructed internally so that parts are enclosed under the cover while draining if the solvent volatility is greater than 4.3 kPa (0.6 psia) measured at 38°C (100°F), except that the drainage facility may be external for applications where an internal type cannot fit into the cleaning system; and

d. Install one of the following control devices if the solvent volatility is greater than 4.3 kPa (0.6 psia) measured at 38°C (100°F), or if the solvent is heated about 49°C (120°F):

1) Freeboard that gives a freeboard ratio greater than or equal to 0.7; or

2) Water cover (solvent must be insoluble in and heavier than water); or

3) Other systems of equivalent control, such as refrigerated chiller or carbon adsorption, approved by the department; and

e. If used, supply a solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure which does not cause extensive splashing; and

f. Provide a permanent, conspicuous label, summarizing the operating requirements; and

g. Provide supervision or instruction adequate to ensure that the operation is conducted in accord with the following:

1) Close the cover whenever parts are not being handled in the cleaner; and

2) Drain the cleaned parts for at least 15 seconds or until dripping ceases; and

3) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another person in such a way as to cause greater than 15% of the waste solvent (by weight) to evaporate into the ambient air during the ozone season, sub. (1) (c) notwithstanding; and

4) Repair solvent leaks immediately, or shut down the degreaser until the leaks are repaired.

3. Open top vapor degreasers. Except as provided under subd. 1.b., c. and e., the owner or operator of an open top vapor degreaser shall:

a. Equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone; 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 if the vapor level does not stay within the normal range; and

c. Install one of the following control devices:

1) A freeboard ratio equal to or greater than 0.75, with a powered or mechanically assisted cover if the degreaser opening is greater than 1.0 square meter (10.8 square feet); or

2) Refrigerated chiller; or

3) Enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser); or

4) 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 cover is open), all passing through a carbon adsorption system which exhausts less than 25 parts per million of solvent averaged over one complete adsorption cycle; or

5) A control system demonstrated to have control efficiency equivalent to or greater than any of 1) through 4) above and approved by the department; and

d. Not position ventilation fans so as to disturb the degreaser's vapor zone, nor provide exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area during the ozone season, unless necessary to meet OSHA requirements; and

e. Keep the cover closed at all times except when processing workloads through the degreaser; and

f. Always spray below the vapor level; and

g. Minimize solvent carryout by:

1) Racking parts to allow complete drainage; and

2) Moving parts in and out of the degreaser at less than 3.3 meters per minute (11 feet per minute); and

3) Holding the parts in the vapor zone at least 30 seconds or until condensation ceases; and

4) Tipping out any pools of solvent on the cleaned parts before removal from the vapor zone; and

5) Allowing parts to dry within the degreaser for at least 15 seconds or until visually dry; and

h. Not degrease porous or absorbent materials, such as cloth, leather, wood or rope; and

i. Move parts out of the degreaser at less than 1.5 meters per minute (4.9 feet per minute) if the workload occupies more than 50% of the degreaser's open top area; and

j. Except where a load cannot be divided, avoid loading the degreaser to the point where the vapor level would drop more than 10 centimeters (4 inches) when the workload is placed in the vapor zone; and

k. Not operate the degreaser so as to allow water to be visually detectable in solvent exiting the water separator; and

l. Follow the requirements of subd. 2.g.3) and 4); and

m. Provide a permanent, conspicuous label, summarizing the operating procedures of subpars. e. through l., and provide supervision or instruction adequate to ensure that the procedures are followed.

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. and b. 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. 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.

(7) **PETROLEUM REFINERY SOURCES.** (a) Vacuum producing systems. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to vacuum producing systems at petroleum refining sources.

2. Requirements. The owner or operator of any vacuum producing systems at a petroleum refinery shall not permit the emission of any non-condensable VOC, from the condensers or accumulators of the system. The control required by this subdivision shall be achieved by:

a. Piping the noncondensable vapors to an operating firebox or incinerator; or

b. Compressing the vapors and adding them to the refinery fuel gas.

(b) Wastewater separators. 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to wastewater separators at petroleum refining sources.

2. Requirements. The owner or operator of any wastewater (oil-water) separators at petroleum refinery shall:

a. Provide covers and seals approved by the department on all separators and forebays; and

b. Equip all openings in covers, separators, and forebays with lids or seals such that the lids or seals are in the closed position at all times except when in actual use.

(c) Process unit turnarounds. 1. Applicability. Effective August 1, 1979, this paragraph applies to process unit turnarounds at petroleum refining sources.

2. Requirements. Notwithstanding sub. (12), before November 1, 1979 the owner or operator of a petroleum refinery shall develop and

submit to the department for approval a detailed procedure for minimizing VOC emissions during process unit turnaround. As a minimum, the procedure shall provide for:

a. Depressurization venting of the process unit or vessel to a flare, firebox or vapor recovery system which prevents release to the ambient air of at least 90% by weight of the VOCs vented; and

b. No emission of VOCs from a process unit or vessel until its internal pressure is 136 kPa (19.7 psia) or less; and

c. Recordkeeping of the following items during the ozone season:

- 1) Every date that each process unit or vessel is shut down; and
- 2) The approximate total quantity of VOCs emitted and the duration of the emission.

(d) Fugitive emission sources.

1. Applicability. Effective April 1, 1981, this paragraph applies to specific fugitive emissions sources at petroleum refineries.

2. Valve requirements. The owner or operator of a petroleum refinery shall not:

a. Install a valve at the end of a pipe or line containing VOCs unless:

- 1) The pipe or line is sealed with a second valve, a blind flange, a plug, or a cap; or
- 2) The valve is a safety pressure relief valve.

b. Operate a pipeline valve or pressure relief valve in gaseous service unless it is visibly marked.

3. Monitoring. The owner or operator of a petroleum refinery shall:

a. Notwithstanding sub. (12), before February 1, 1981, develop and submit to the department for approval a monitoring schedule for fugitive emission sources. At a minimum, the schedule shall provide for:

**Note:** The deadline for developing and submitting a monitoring schedule for fugitive emissions sources should be July 1, 1981, not February 1, 1981.

- 1) Yearly monitoring of all pump seals, pipeline valves in liquid service, and process drains;
- 2) Quarterly monitoring of all compressor seals, pipeline valves in gaseous service, and pressure relief valves in gaseous service; and
- 3) Routine visual inspection of all pump seals on a weekly basis.

b. Provide for the following actions to be performed immediately under the following circumstances:

- 1) Monitoring of any pump seals from which liquids are observed dripping;
- 2) Monitoring, subsequent to repair, of any component that had been found leaking; and

3) Visual inspection of the seating of any pressure relief valve after it has vented to the atmosphere.

c. Be exempt from the monitoring requirements of subd. 3.a. and b. for:

1) A pressure relief device connected to an operating flare header, or vapor recovery device;

2) Inaccessible valves;

3) Storage tank valves; and

4) Valves not externally regulated.

d. Upon detection of a leaking component which is producing a VOC concentration in excess of 10,000 ppm at any point accessible to the monitoring device:

1) Affix a weatherproof and readily visible tag bearing an identification number and the date the leak is detected to the leaking component;

2) Include the leaking component on a written list of scheduled repairs within 24 hours;

3) Repair and retest the component within 15 days when this is possible without shutting down operations; and

4) Identify all leaking components which cannot be repaired until the unit is shut down for turnaround.

4. Reporting. Beginning June 15, 1981, submit quarterly report to the department containing the following:

Note: The initial date for submitting quarterly reports on the monitoring program should be January 15, 1982, not June 15, 1981.

a. A statement attesting to performance of the monitoring program as approved under subd. 3.a.;

b. The number of each type of components inspected and the total number of components found leaking;

c. Lists of all leaking components awaiting unit turnaround;

d. Lists of any additional leaking components detected but not repaired within 15 days;

e. Status of repair operations of leaking components.

5. Recordkeeping. Maintain a leaking component monitoring log, for a period of 3 years from the recording date, containing as a minimum:

a. The name of the process unit where the component is located;

b. The type of component (e.g., valve, seal);

c. The composition of the stream on which the component is located;

d. The tag number of the component;

e. The date on which a leaking component is discovered;



- f. The date on which a leaking component is repaired;
- g. The date and instrument reading of the recheck procedure after a leaking component is repaired;
- h. A record of the calibration of the monitoring instrument;
- i. A list of leaks that cannot be repaired until turnaround; and
- j. The total number of components checked in the last quarter and the total number of components found leaking.

(8) RUBBER PRODUCTS MANUFACTURE. (a) Pneumatic rubber tire manufacture. 1. Applicability. a. Effective April 1, 1981, this paragraph applies, subject to the provisions of sub. (12) to all pneumatic rubber tire manufacturing facilities involved in undertread cementing, tread end cementing, bead dipping, or green tire spraying operations.

b. This paragraph does not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption applies only to tires produced on equipment separate from normal production lines for passenger type tires.

c. The requirements of subd. 2. do not apply provided the combined total VOC emissions from all undertread cementing, tread end cementing, bead dipping and green tire spraying operations are less than or equal to 57 grams per tire produced and the emission rates are determined and certified under subd. 3. by August 31, 1981.

2. Emission control requirements. The owner or operator of a pneumatic rubber tire manufacturing facility shall:

a. For all undertread cementing, tread end cementing and bead dipping operations install and operate:

1) A carbon adsorption system which reduces the VOC emissions from the capture system by at least 90% by weight;

2) An incineration or catalytic oxidation system which oxidizes at least 90% of the nonmethane VOCs (measured as total combustible carbon) which enter the incineration or oxidation unit, to non-organic compounds;

3) An alternative VOC emission reduction system demonstrated to have at least 90% reduction efficiency measured across the control system, as approved by the department.

b. For green tire spraying operations, implement one of following control strategies:

1) Utilize water-based mold release compound sprays with a volatile fraction containing, at a minimum, 90% water;

2) Install and operate a carbon adsorption system which reduces the VOC emission from the capture system by at least 90% by weight;

3) Install and operate an incineration or catalytic oxidation system which oxidizes at least 90% of the nonmethane VOCs (VOC measured

as total combustible carbon) which enter the incinerator or oxidation unit to nonorganic compounds; or

4) Install and operate an alternate VOCs emission reduction system demonstrated to have at least a 90% reduction efficiency, measured across the control system, as approved by the department.

c. For any control device required by this subsection, install and operate a capture system, as approved by the department, which is designed to provide maximum reasonable capture and transfer of VOCs to the control device. Maximum reasonable capture and transfer shall be in accord with guidance provided by:

1) Industrial Ventilation: A Manual of Recommended Practices, 14th ed., and

2) Recommended Industrial Ventilation Guidelines.

Note: See Industrial Ventilation: A Manual of Recommended Practices, 14th ed., Committee on Industrial Ventilation, American Conference of Governmental Hygienists, 1976, (available from: Governmental Industrial Hygienists, P.O. Box 16153, Lansing, Michigan 48901) and U.S. Department of Health, Education and Welfare, National Institute of Occupational Safety and Health, Recommended Industrial Ventilation Guidelines, Springfield, VA: National Technical Information Service, PB 266 227, 1976. Copies of these documents are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin and may be obtained for personal use from the respective agencies listed above.

3. Emissions testing schedule. The owner or operator of a pneumatic rubber tire manufacturing facility shall not exceed the following deadlines:

a. Submit, by May 1, 1981, a plan for tests to measure VOC emissions from undertread cementing and tread end cementing operations. Any capture systems used for such tests shall be designed in accord with guidelines presented in subd. 2.c.

b. Commence construction of systems needed in order to measure emissions by June 15, 1981.

c. Complete construction of equipment needed for testing and begin testing by July 1, 1981.

d. Complete testing by July 31, 1981.

e. Submit to the Department of documentation, including test results, of the actual combined total VOC emissions from all undertread cementing, tread end cementing, bead dipping and green tire spraying operations per tire produced by August 31, 1981.

(9) CHEMICAL MANUFACTURE. (a) Pharmaceutical manufacture. 1. Applicability. Effective April 1, 1981, this paragraph applies, subject to the provisions of sub. (12), to all operations at pharmaceutical manufacturing facilities involved in the manufacture of pharmaceutical products by chemical synthesis, with the exception of any reactor, distillation unit, dryer, filter, crystallizer, centrifuge, or other individual operation that has a potential emission rate of less than 6.8 kilograms per day (15 pounds per day).

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)  $-25^{\circ}\text{C}$  ( $-13^{\circ}\text{F}$ ) for VOCs with vapor pressure greater than 40 kPa (5.8 psia) as measured at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ );

2)  $-15^{\circ}\text{C}$  ( $5^{\circ}\text{F}$ ) for VOCs with vapor pressure between 20 kPa (2.9 psia) and 40 kPa (5.8 psia) as measured at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ );

3)  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) for VOCs with vapor pressure between 10 kPa (1.5 psia) and 20 kPa (2.9 psia) as measured at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ );

4)  $10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ ) for VOCs with vapor pressure between 7 kPa (1.0 psia) and 10 kPa (1.5 psia) as measured at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ );

5)  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ) for VOCs with vapor pressure between 3.5 kPa (0.5 psia) and 7 kPa (1.0 psia) as measured at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ).

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  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ).

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. Paragraphs (b) through (g) do not apply to sources which are in compliance with the emission limitations of this section before the dates specified in subs. 1., 2. and 3., provided the sources have determined and certified compliance to the satisfaction of the department within 90 days after the specified date nor do pars. (b) through (f) apply to sources on which construction or modification commenced on or after the specified date. Sources on which construction or modification commenced on or after the specified date shall meet the emission requirements of this section upon start-up.

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.

4. 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 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.

(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:

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

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:

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

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 recr., Register, June, 1976, No. 234, eff. 7-1-76; 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.

**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, 1976, No. 234, eff. 7-1-76.

**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.

2. Firing of liquid fossil fuel: 0.30 pounds of NO<sub>2</sub> per million BTU input.

3. Firing of solid fossil fuel: 0.70 pounds of NO<sub>2</sub> per million BTU input.

(b) **New or modified weak nitric acid plants (acid 30 to 70% in strength):** 3.0 pounds of NO<sub>2</sub> 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:

Register, March, 1981, No. 303  
Environmental Protection

(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.