Chapter NR 154

AIR POLLUTION CONTROL

History: Chapter NR 154 as it existed on March 31, 1972 was repealed and a new chapter NR 154 was created, Register, March, 1972, No. 195, effective April 1, 1972.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. In chs. NR 154 and 155, the following words have the designated meanings, unless a different meaning is expressly provided:

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

(1g) "Active waste disposal site" means any disposal site other than an inactive site.

(1r) "Adequately wetted" means sufficiently mixed or coated with water or an aqueous solution to prevent dust emissions.

(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.

(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.

(12m) "Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the department's satisfaction to produce, in specific cases, results adequate for the department's determination of compliance.

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

(13m) "Ambient air increment" or "air increment" means the maximum allowable increase in concentration of an air contaminant above the base line concentration of the air contaminant.

(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).

(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 temolite.

(b) "Asbestos mill" means any facility engaged in the conversion or any intermediate step in the conversion of asbestos ore into commerical 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.

(19m) "Asbestos-containing waste material" means any waste which contains commercial asbestos and is generated by a source subject to the provisions of s. NR 154.19(4), including asbestos mill tailings, control device asbestos waste, friable asbestos waste material, and bags or containers that previously contained commercial 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.

(27m) "Basic emissions unit" means the smallest collection of equipment which in combination emits or is capable of emitting any air contaminant.

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

(28e) "Beryllium" means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any other elements.

(28j) "Beryllium alloy" means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(28o) "Beryllium-containing waste" means material contaminated with beryllium or beryllium compounds, or both, used or generated during any process or operation performed by a source subject to s. NR 154.19(5).

(28t) "Beryllium ore" means any naturally occurring material mined or gathered for its beryllium content.

(28y) "Beryllium propellant" means any propellant incorporating beryllium.

(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.

(35m) "Bulk resin" means a resin which is produced by a polymerization process in which no water is used.

(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.

(38m) "Cartridge filter" means a perforated canister containing filtration paper or activated carbon, or both, that is used to remove solid particles and fugitive dyes from soil-laden solvent.

(38s) "Cell room" means a structure housing one or more mercury chlor-alkali cells.

(38w) "Ceramic plant" means a manufacturing plant producing ceramic items.

(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 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 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 onsite 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 onsite 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.

(50m) "Condenser stack gases" mean the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury ore.

(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.

(52m) "Control device asbestos waste" means any asbestos-containing waste material that is collected in a pollution control device.

(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 (diluents) 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.

(59g) "Demolition" means the wrecking or taking out of any load-supporting structural member and any related removing or stripping of friable asbestos materials.

(59r) "Denuder" means a horizontal or vertical container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(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.).

(61m) "Dispersion resin" means a resin manufactured in such a way as to form fluid dispersions when dispersed in a plasticizer or a plasticizer and diluent mixture.

(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 or leather 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.

(64m) "Emergency renovation" means a renovation operation that results from a sudden, unexpected event, and is not a planned renovation. Operations necessitated by non-routine failures of equipment are included.

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

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

(66m) "Emissions unit" means any part of a stationary source which emits or is capable of emitting any air contaminant.

(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.

(67g) "End box" means one or more containers located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.

(67r) "End box ventilation system" means a ventilation system which collects mercury emissions from the end boxes, the mercury pump sumps, and their water collection systems.

(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.

(68m) "Energy intensive control device" means an air pollution control device or system which consumes energy at a rate in excess of what would be required to heat the exhaust gas stream from 70°F to 800°F, taking into account energy recovered in the form of heat or organic compounds.

(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.

(69m) "Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the department's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

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

(70g) "Ethylene dichloride plant" includes any plant which produces ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene.

(70r) "Ethylene dichloride purification" includes any part of the process of ethylene dichloride production which follows ethylene dichloride formation and in which finished ethylene dichloride is produced.

(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.

(71m) "Extraction plant" means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

(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.

(72m) "Fabricating" means any processing of a manufactured product containing commercial asbestos, with the exception of processing at temporary sites for the construction or restoration of buildings, structures, facilities or installations.

(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.

(75m) "Fixed capital cost" means the capital needed to provide all of the depreciable components.

(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.

(79m) "Foundry" means a facility engaged in the melting or casting of metal or metal alloys.

(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.

(81m) "Friable asbestos material" means any material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

(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.

(89m) "Grade of resin" means the subdivision of resin classification which describes it as a unique resin, i.e., the most exact description of a resin with no further subdivision.

(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 consistantly be exposed to temperatures greater than 95°C (203°F).

(94m) "Highway" has the meaning given it in s. 340.01 (22), Stats.

(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.

(95m) "Hour" means any 3,600 second period.

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

(96m) "Hydrogen gas stream" means a hydrogen stream formed in the chlor-alkali cell denuder.

(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.

(98m) "Inactive waste disposal site" means any disposal site or portion thereof where additional asbestos-containing waste material will not be deposited and where the surface is not disturbed by vehicular traffic.

(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.

(100m) "Inprocess wastewater" means any water which, during manufacturing or processing, comes into direct contact with vinyl chloride or polyvinyl chloride or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing vinyl chloride or polyvinyl chloride but which has not been discharged to a wastewater treatment process or discharged untreated as wastewater.

(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.

(103m) "In vinyl chloride service" means a piece of equipment that contains or contacts either a liquid that is at least 10% by weight vinyl chloride or a gas that is at least 10% by volume vinyl chloride.

(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.

(106m) "Laboratory" means a facility or portion of a multi-use facility which does not produce a product for regular commercial use or sale and which is used primarily for scientific or technical experimentation or observation of matter for the purpose of research, development, quality assurance, analysis or teaching.

(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.

(107m) "Latex resin" means a resin which is produced by a polymerization process which initiates from free radical catalyst sites and is sold undried.

(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.

(114m) "Machine shop" means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching or other similar operations.

(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.

(115m) "Manufacturing of asbestos products" means the combining of commercial asbestos, or in the case of woven friction products the combining of textiles containing commercial asbestos, with any other material, including commercial asbestos, and the processing of this combination into a product as specified in s. NR 154.19(4)(c).

(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.

(116e) "Mercury" means the element mercury, excluding any other elements, and includes mercury in particulates, vapors, aerosols and compounds.

(116j) "Mercury chlor-alkali cell" means a device which is basically composed of an electrolyzer section and a denuder or decomposer section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.

(116o) "Mercury chlor-alkali electrolyzer" means an electrolytic device which is part of a mercury chlor-alkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

(116t) "Mercury ore" means a mineral mined specifically for its mercury content.

(116y) "Mercury ore processing facility" means a facility processing mercury ore to obtain mercury.

(117) "Mobile source" means any motor vehicle or equipment other than a semistationary source which is capable of emitting any air con-

taminant while moving (e.g., automobile, bulldozer, bus, locomotive, motorboat, motorcycle, snowmobile, steamship, truck, etc.).

(118) "Modification" has the meaning designated in s. 144.30 (20), Stats.

(118m) "Motor vehicle" or "vehicle" means every self-propelled device, except railroad trains, by which any person or property is or may be transported or drawn upon a highway.

(118n) "Municipality" has the meaning given it in s. 144.01 (6), Stats.

(118s) "Municipal garbage and refuse" means garbage and refuse, as those terms are defined in ch. NR 180, which are primarily generated by residential activities but which may include minor amounts of commercial and industrial garbage and refuse that are in the total waste stream and are not hazardous. Municipal garbage and refuse does not include sludge which is generated from a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility.

(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 redistillation, 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.

(147m) "Planned renovation" means a renovation operation, or a number of such operations, in which the amount of friable asbestos material that will be removed or stripped within a given period of time can be predicted. Operations that are individually nonscheduled are included, provided a number of such operations can be predicted to occur during a given period of time based on operating experience.

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

(148m) "Polyvinyl chloride plant" includes any plant where vinyl chloride alone or in combination with other materials is polymerized.

(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 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.

(156g) "Propellant" means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(156r) "Propellant plant" means any facility engaged in the mixing, casting or machining of propellant.

(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.

(159m) "Public trafficable area" means any trafficable area which is owned, operated, maintained or controlled by a municipality, interstate agency, state agency or federal agency.

(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.

(162m) "Reconstruction" means the removal of components of a stationary source and the substitution of those components with similar new components to such an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new stationary source. The term "reconstruction" does not apply to minor sources.

(162s) "Reference method" means any method of sampling and analyzing for an air pollutant, as described in 40 C.F.R. pt. 61, Appendix B.

(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).

(164g) "Relocation" means the removal of a stationary source from one location and the siting of the stationary souce at a different location.

(164m) "Renovation" means the removing or stripping of friable asbestos material used on any pipe, duct, boiler, tank, reactor, turbine, furnace or structural member. Operations in which load-supporting structural members are wrecked or taken out are excluded.

(164n) "Replacement" means the physical dismantling of a stationary source and the substitution of that source with a stationary source which is similar in operating capacity and function.

(164t) "Residual fuel oil" means an industrial fuel oil of grade No. 4, 5 or 6, as determined by the specifications in ASTM D396.

Note: See American Society for Testing and Materials 1983, "1983 Annual Book of ASTM Standards, Volume 05.01." Copies of this document 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 American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

(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.

(165m) "Roadway" has the meaning given it in s. 340.01 (54), Stats.

(165q) "Roadway areas" means any surface on which motor vehicles travel including, but not limited to, highways, roads, streets, parking areas and driveways.

(165w) "Rocket motor test site" means any building, structure, facility or installation where the static test firing of a beryllium rocket motor or the disposal of beryllium propellant, or both, is conducted.

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(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.

(169m) "Run" means the net period of time during which an emission sample is collected.

(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.

(175e) "Slip gauge" means a gauge which has a probe that moves through the gas to liquid interface in a storage or transfer vessel and indicates the level of vinyl chloride in the vessel by the physical state of the material the gauge discharges.

(175m) "Sludge" means sludge produced by a treatment plant that processes municipal or industrial wastewater.

(175s) "Sludge dryer" means a device used to reduce the moisture content of sludge by heating to temperatures above 65°C (ca. 150°F) directly with combustion gases.

(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.

(178m) "Solvent recovery dryer" means a dry cleaning dryer that employs a condenser to liquefy and recover solvent vapors evaporated in a closed-loop, recirculating stream of heated air.

(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, 1975, 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.

(182e) "Standard operating procedure" means a formal written procedure officially adopted by the plant owner or operator and available on a routine basis to those persons responsible for carrying out the procedure.

(182m) "Standard pressure" means a pressure of 760 millimeters of mercury (29.92 inches of mercury).

(182s) "Standard temperature" means a temperature of 20°C (69°F).

(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.

(184e) "Stripper" includes any vessel in which residual vinyl chloride is removed from polyvinyl chloride resin, except bulk resin, in the slurry form by the use of heat or vacuum, or both. In the case of bulk resin, stripper includes any vessel which is used to remove residual vinyl chloride from polyvinyl chloride resin immediately following the polymerization step in the plant process flow.

(184m) "Stripping" means taking off friable asbestos materials from any pipe, duct, boiler, tank, reactor, turbine, furnace or structural member.

(184s) "Structural member" means any load-supportng member, such as beams and load-supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

(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.

(193m) "Trafficable area" means any area, including but not limited to a parking lot or storage area, which is external to a building or structure, is reasonably capable of being traveled by a motor vehicle, and is accessible to a motor vehicle.

(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 2517, *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.

(199m) "Type of resin" means the broad classification of resin referring to the basic manufacturing process for producing that resin, including, but not limited to, the suspension, dispersion, latex, bulk and solution processes.

(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.

(206e) "Vinyl chloride purification" includes any part of the process of vinyl chloride production which follows vinyl chloride formation and in which finished vinyl chloride is produced.

(206j) "Vinyl chloride plant" includes any plant which produces vinyl chloride by any process.

(206o) "Vinyl chloride reactor" includes any vessel in which vinyl chloride is partially or totally polymerized into polyvinyl chloride.

(206t) "Vinyl chloride reactor opening loss" means the emission of vinyl chloride occurring when a reactor is vented to the atmosphere for any purpose other than an emergency relief discharge as defined in s. NR 154.19(6)(f)1.c. and (g)1.

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

(207m) "Visible asbestos emissions" means any emissions which are visually detectable without the aid of instruments and which contain particulate asbestos material.

(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, clarifer, etc., which removes petroleum derived compounds from wastewater.

(209m) "Wastewater treatment process" includes any process which modifies characteristics such as biological or chemical oxygen demand,

total suspended solids, or pH, usually for the purpose of meeting effluent guidelines and standards but does not include any process the purpose of which is to remove vinyl chloride from water to meet requirements of s. NR 154.19(6).

(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) 6 to be (41) (c); am. (41)(c) 3. and 4., Register, December, 1972, No. 204, eff. 1-1-73; r. and recr., Register, June, 1975, No. 234, eff. 7-1-75; 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. 256, 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; cr. (118m) and (193m), Register, March, 1982, No. 315, eff. 4-1-82; cr. (94m), (118n), (159m) and (165m), Register, October, 1982, No. 322, eff. 11-1-82; cr. (intro.), (13m), (27m), (66m), (75m), (106m), (118s), (162m), (164g) and (164m), r. and recr. (118), Register, April, 1983, No. 328, eff. 5-1-83; cr. (68m), Register, July, 1983, No. 331, eff. 8-1-83; cr. (38m) and (178m) and am. (63), Register, November, 1983, No. 335, eff. 12-1-83; cr. (1g), (1r), (12m), (19m), (28e), (28j), (28o), (28t), (28y), (35m), (38s), (38w), (50m), (52m), (59g), (59r), (61m), (64m), (67g), (67r), (69m), (70g), (70r), (71m), (72m), (79m), (81m), (89m), (96m), (98m), (100m), (103m), (107m), (114m), (115m), (116e), (116j), (116o), (116t), (116y), (147m), (148m), (156g), (156r), (162s), (164m), (165q), (165w), (169m), (175e), (175m), (175s), (182e), (182m), (182s), (184e), (184m), (184s), (199m), (206e), (206j), (206o), (206t), (207m), and (209m), Register January, 1984, No. 337, eff. 2-1-84; cr. (95m), Register, September, 1984, No. 345, eff. 10-1-84; cr. (164t), Register, January, 1985, No. 349, eff. 2-1-85.

NR 154.015 Department review times. Unless another time period is specified by law, the department shall complete its review and make a determination on all applications for permits and approvals listed under this section within the number of business days indicated, based on the date of receipt of the application.

(1) Alternate fuel variances under s. NR 154.02 (4) - business days;

(2) Temporary excess emissions plans under s. NR 154.09 (1) (b) - 65 business days; and

(3) Use of emergency or reserve equipment under s. NR 154.09 (1) (c) - 65 business days.

History: Cr. Register, April, 1985, No. 352, eff. 5-1-85.

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.

(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 s. NR 154.06 (9) was complied 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 s. 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 re-

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quirements 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.

c. Requests for revisions shall be signed by the principal executive officer; partner; sole proprietor; or principal governmental executive or elected official or a duly authorized representative, as appropriate.

d. Requests shall contain other relevant information as required by the department.

(b) The department, in acting upon any request for a revision under this subsection, shall:

1. Act on requests for revisions within 3 months of the filing of a completed request.

2. Offer, through public notice, the opportunity for public comments including, where requested, a public hearing.

3. State in writing the reasons for denying, granting, or for granting in modified form any request.

(c) The department may, after notice and opportunity for hearing, revoke or modify any revision when:

1. Any term or condition of the revision has been violated;

2. Changes in ambient air quality indicate that the source has a significant adverse impact on the attainment or maintenance of any ambient air quality standard; or

3. The owner or operator did not act in good faith in demonstrating the technological or economic infeasibility of compliance with the general RACT requirements or in submitting other relevant information in support of the revision request.

(d) When the department grants, modifies or revokes a source-specific revision to a general RACT requirement which has been approved by the adminstrator of the U.S. environmental protection agency as part of the state implementation plan, such revision shall not become effective until:

1. It has been submitted to the administrator pursuant to applicable law, including but not limited to 42 U.S.C. 7410, as amended, and 40 CFR Parts 51 and 52, as amended, and all such requirements have been met, and

2. It has been approved by the administrator or designee as a revision to the state implementation plan.

(4) ALTERNATE FUEL VARIANCES. The department may grant temporary variances from the emission limitations of this chapter to air contaminant sources which request such variances in order to switch from a

regular fuel to an alternate fuel which is in more plentiful supply, provided that the conditions of this subsection are met.

(a) If the office of state planning and energy has certified that a switch from the fuel regularly used by the applicant to an alternate fuel which would cause an emission limitation to be exceeded is needed to protect public health, safety or welfare in the applicant's part of the state, the department may grant a temporary variance from such requirements provided that:

1. The applicant has submitted a list of steps which will be implemented without delay to minimize adverse effects caused by the switch in fuels permitted by the variance, including all feasible steps to minimize use of the alternate fuel through energy conservation and other measures; and

2. The applicant has provided, or has agreed to provide within 5 days after the date the variance is granted, information on the type, quantity and quality of fuel and rate of consumption in use before and to be used after the switch in fuels; and

3. Granting the variance would be unlikely to cause or exacerbate a violation of any primary ambient air quality standard; and

4. Litigation for violation of an emission limitation prescribed in this chapter or an ambient air quality standard prescribed in ch. NR 155 is not presently pending; and

5. The applicant has agreed to submit no later than 90 days from the date that the variance is granted a plan and time schedule for preventing the recurrence of the conditions which necessitated a variance request; and

6. The applicant submitted and implemented in good faith any plan required to be submitted as a condition to a previously-granted variance; and

7. After July 1, 1978, if the applicant uses natural gas or distillate oil as a regular fuel, the applicant has submitted and received department approval of a plan to minimize dependence on these fuels while complying with the emission limitations of this chapter.

(b) If the office of state planning and energy has not certified that a switch in fuels is needed, the department may grant a temporary variance from the emission limitations of this chapter only if the conditions of par. (a) are met and the applicant has submitted documentation of the unavailability of the fuel regularly used and of any alternate fuel which the air contaminant source has the capability to burn in compliance with emission limitations.

(c) When granting a variance is likely to cause a secondary standard (but not a primary standard) to be violated or exacerbated, the following conditions shall apply:

1. The variance must specify an expiration date no later than 45 days from the date the variance is granted.

2. Prior to granting a variance extension which expires on a date more than 45 days after the date the variance was originally granted, the department shall:

a. Determine either that the applicant's regular fuel is unavailable or that certification by the office of state planning and energy of the need for a switch in fuels in the applicant's part of the state remains in effect; and

b. Evaluate through ambient air quality monitoring and/or dispersion modeling the air quality impact of granting the variance and determine that maintenance of the primary standards is not being endangered; and

c. Solicit and consider public comment on permitting the extension.

(d) When granting a variance is unlikely to cause any ambient air quality standard to be violated, the following conditions shall apply:

1. The variance must specify an expiration date no later than 60 days from the date the variance is granted.

2. Prior to granting a variance extension which expires on a date more than 60 days after the date the variance was originally granted, the department shall:

a. Determine either that the applicant's regular fuel is unavailable or that certification by the office of state planning and energy of the need for a switch in fuels in the applicant's part of the state remains in effect; and

b. Evaluate through ambient air monitoring and/or dispersion modeling the air quality impact of granting the variance. If the evaluation indicates that maintenance of the air standards is not being endangered, an extension may be granted. If the evaluation indicates that a secondary air standard has been or may be violated, the procedure set forth in par. (c) 2. shall apply.

(e) The department may rescind or amend a variance granted under sub. (4) at any time.

(5) The issuance or granting of any order or variance under sub. (2), (3) or (4) shall not relieve any person of the duty to comply with all other applicable federal, state and local laws and rules.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; am. (1), cr. (2) and (3), Register, June, 1975, No. 234, eff. 7-1-75; cr. (2) (d), Register, July, 1975, No. 235, eff. 8-1-75; cr. (4), Register, November, 1977, No. 263, eff. 12-1-77; am. Register, September, 1979, No. 285, eff. 10-1-79.

NR 154.03 Nonattainment areas; sources affected. (1) NONATTAINMENT AREAS. The department may, from time to time, issue documents defining, listing or describing any area of the state where it has determined that any ambient air quality standard for any air contaminant is not being met.

(2) SOURCES AFFECTED. Upon issuing documents under sub. (1), the department shall also issue documents identifying, listing or describing air contaminant sources located in or near nonattainment areas, the location or impact of whose emissions require such sources to comply with RACT emission limitations specified in s. NR 154.11 or 154.12.

(3) The impact of a source's emissions on a nonattainment area shall be determined by the department, using methods including but not lim-

ited to ambient air monitoring and meteorological data, and diffusion modeling.

(4) The failure to identify, in a document issued under sub. (2), a specific source in or near a nonattainment area which is otherwise subject to RACT emission limitations shall not relieve such source from compliance.

(5) The department may issue or revise a document under sub. (1) or (2) only after 30 days notice and public hearing in the region affected. Such hearings shall not be contested cases under s. 227.01 (2), Stats.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; am. Register, June, 1975, No. 234, eff. 7-1-75; r. and recr. Register, September, 1979, No. 285, eff. 10-1-79.

NR 154.04 Permit requirements and exemptions. (1) CONSTRUCTION OR MODIFICATION AND NEW OPERATION PERMITS. No person may commence construction, reconstruction, replacement, relocation or modification of a stationary source or operate the constructed, reconstructed, replaced, relocated or modified stationary source unless the person has a construction or modification and new operation permit for the source or unless the source is exempt from the requirement to obtain a permit under s. 144.391 (4) or (5), Stats., or under this section. Applications for the construction or modification and new operation permit shall be submitted on forms which are available from the department at its Madison headquarters and district offices.

(2) SOURCES EXEMPT FROM CONSTRUCTION OR MODIFICATION AND NEW OPERATION PERMIT REQUIREMENTS. (a) *Specific categories of exempt sources.* The following categories of stationary sources are exempt from the requirement to obtain a construction or modification and new operation permit unless the construction, reconstruction, replacement, relocation or modification of the source is prohibited by any permit, plan approval or special order applicable to the source or the source is required to obtain a permit because of incremental growth as determined under sub. (6) (c):

1. Fuel burning equipment which will not burn any hazardous waste identified under ch. NR 181, or which has been issued a permit under ch. NR 181, and which is designed to burn the following fuels at the rates indicated:

a. Coal, coke or other solid fuels, except wood, at a heat input rate of not more than one million BTU per hour;

b. Wood alone or wood in combination with gaseous or liquid fuels at a heat input rate of not more than 5 million BTU per hour;

c. Residual or crude oil at a heat input rate of not more than 5 million BTU per hour;

d. Distillate oil at a heat input rate of not more than 10 million BTU per hour; and

e. Gaseous fuel at a heat input rate of not more than 30 million BTU per hour.

2. Equipment designed to incinerate solid wastes, which are not pathological wastes and are not hazardous wastes under ch. NR 181, at a rate of not more than 500 pounds per hour.

3. Equipment designed to dry grain at a rate of not more than 1,500 bushels per hour at 5% moisture extraction.

4. Portland concrete batching plants which are not major sources.

5. Storage tanks of petroleum liquid or nonvolatile organic compounds with a maximum capacity of not more than 40,000 gallons of petroleum liquid or of organic compounds which are not VOCs.

6. VOC storage tanks with a maximum capacity of not more than 10,000 gallons of volatile organic compounds.

7. Painting or coating operations, including associated cleaning operations, which use or will use not more than 250 total gallons of paint, coatings and solvents per month or which emit or will emit not more than 1666 pounds of volatile organic compounds per month, without considering pollution control equipment.

8. Graphic arts operations, including associated cleaning operations, which use or will use not more than 250 total gallons of coatings, inks and solvents per month or which emit or will emit not more than 1666 pounds of organic compounds per month, without considering pollution control equipment.

9. Research and testing. a. Equipment used or to be used for the purpose of testing or research provided:

1) A complete application for exemption is made describing the proposed testing or research and including an operating schedule and the types and quantities of emissions anticipated; and

2) The department determines that the equipment to be used and the anticipated emissions from the testing or research will not present a significant hazard to public health, safety or welfare or to the environment and approves the application for exemption.

b. The department shall approve or deny the application in writing within 45 days of receiving a complete application for exemption under this subdivision. The department may provide public notice of an application for research and testing exemption, may provide an opportunity for public comment and an opportunity to request a public hearing and may hold a public hearing on any application under this subdivision. The department shall make all nonconfidential information available to the public upon request.

10. A laboratory which emits organic compounds, sulfur dioxide, carbon monoxide, nitrogen oxides or particulate matter or a combination thereof at a rate of less than 5.7 pounds per hour. Emissions shall be determined, without considering pollution control equipment, by dividing the total emissions during a calendar month by the total hours of operation of the laboratory during that calendar month. A laboratory is in operation if laboratory apparatus or equipment is in use.

11. Equipment whose primary purpose is to transport or sort paper.

12. Water chlorination facilities.

13. An indirect source located in a standard metropolitan statistical area (SMSA) which meets one of the following criteria:

a. Any new parking facility, or other new indirect source, except a highway or airport, with an associated parking area, which has a parking capacity of not more than 1,000 cars.

b. Any modified parking facility or any modification of an associated parking area which increases parking capacity by not more than 500 cars.

c. Any new highway project with an anticipated annual peak hour traffic volume of not more than 1,200 vehicles per hour within 10 years of construction.

d. Any highway modification project which will increase the annual peak hour traffic volume by not more than 1,200 vehicles per hour within 10 years after modification.

14. An indirect source located outside all SMSA's which meets one of the following criteria:

a. Any new parking facility or other new indirect source, except a highway or airport, with an associated parking area which has a parking capacity of not more than 1,500 cars.

b. Any modified parking facility or any modification of an associated parking area which increases parking capacity by not more than 750 cars.

c. Any new highway project which will carry not more than 3 lanes of traffic and which has an anticipated annual peak hour traffic volume of not more than 1,800 vehicles per hour within 10 years of construction.

d. Any highway modification project which will create not more than one additional lane of traffic and which will increase the annual peak hour traffic volume by not more than 1,800 vehicles per hour within 10 years after modification.

15. An airport whose construction or general modification program is expected to result in the following activity within 10 years after construction or modification:

a. New airport: Not more than 50,000 operations per year by regularly scheduled certificated air carriers and use by not more than 1,000,000 passengers per year.

b. Modified airport: Increase of not more than 50,000 operations per year by regularly scheduled certificated air carriers over the the existing volume of operations and an increase of not more than 1,000,000 passengers per year.

(b) *General category of exempt sources.* In addition to the specific categories of exempt sources identified in par. (a), no construction or modification and new operation permit is required prior to commencing construction, reconstruction, replacement, relocation or modification and operation of a source if:

1. The construction, reconstruction, replacement, relocation or modification and operation of the source is not prohibited by any permit, plan approval or special order applicable to the source;

2. The source will not emit sulfur dioxide, carbon monoxide or nitrogen oxides at a rate of more than 9 pounds per hour for each pollutant emitted, without considering pollution control equipment;

3. The source will not emit particulate matter or organic compounds at a rate of more than 5.7 pounds per hour for each pollutant emitted, without considering pollution control equipment;

4. The source will not emit any of the following air contaminants at a rate greater than the applicable emission rate listed:

a. Fluorides, 3 tons per year;

b. Hydrogen sulfide, 10 tons per year;

c. Reduced sulfur compounds, 10 tons per year;

d. Total reduced sulfur, 10 tons per year;

e. Vinyl chloride, 1 ton per year.

5. The source will not emit asbestos, antimony, barium, beryllium, bromine, cadmium, chlorine, chromic acid, chromates, chromium, cobalt fume or dust, copper fume or dust, cyanides, fluorine, hydrogen chloride, hydrogen fluoride, iron (water soluble salts), lead, manganese, mercury, molybdenum, nickel carbonyl, nickel, nitric acid including anhydrides, phosphoric acid including anhydrides, phosphorus (yellow), platinum (water soluble salts), selenium, sulfuric acid, thallium (water soluble compounds), tin, uranium, vanadium, pesticides, their mixtures, or their compounds or any other pollutant not listed in subd. 2., 3., 4., or this subdivision which is subject to regulation under the federal clean air act as of May 1, 1983;

6. The source will not emit any air contaminant not mentioned in subd. 2., 3., 4., or 5., at a rate of more than 6 pounds per hour for each pollutant emitted, without considering pollution control equipment; and

7. The source is not required to obtain a permit because of incremental growth as determined under sub. (6) (c).

(c) *Exempt modifications of existing sources.* In addition to the exempt modifications listed in s. 144.391 (4), Stats., no construction or modification and new operation permit is required prior to commencing modification of a source which is modified by the addition of a new emissions unit or by any other modification if:

1. The modification is not prohibited by any permit, plan approval or special order applicable to the source;

2. The modification is exempt under par. (a) or the emissions from the modification do not exceed the exemption levels set forth in par. (b) 2., 3., 4., 5., and 6.; and

3. The source is not required to obtain a permit because of incremental growth as determined under sub. (6) (c).

(3) EXEMPT MODIFICATIONS. (a) *Use of alternate fuel or raw material.* In addition to the exempt modifications listed in s. 144.391 (4), Stats., no construction or modification and new operation permit is required for a source to use an alternate fuel or raw material which the source is designed to burn or use if:

1. The source has continuously had such design capability as a result of construction or modification which commenced before April 1, 1972; and

2. Such use will not cause or exacerbate the violation of an ambient air quality standard or an ambient air increment; and

3. Such use is not prohibited by any permit, plan approval or special order applicable to the source.

(b) *VOC RACT compliance.* No construction or modification and new operation permit is required for the modification of a source which is made primarily for the purpose of complying with the requirements of a RACT compliance plan approved under s. NR 154.13, or a VOC RACT variance approved under s. NR 154.02 (3), if the modification does not cause or exacerbate the violation of an ambient air quality standard or ambient air increment for any air contaminant other than ozone.

(c) *Resumption of operation.* No construction or modification and new operation permit is required for the resumption of operation of a source after a period of closure if the source was never included and never required to be included in the source inventory as an existing source covered by plans under s. 144.31 (1) (f), Stats., and the resumption of operation of the source will not cause or exacerbate the violation of an ambient air quality standard or an ambient air increment and will not result in the emission of a new air contaminant and the resumption of operation is not prohibited by any permit, plan approval or special order applicable to the source.

(d) *Municipal waste fuel.* No construction or modification and new operation permit is required for the modification of a steam-generating unit to use an alternate fuel, whether or not the unit has the design capability to use the alternate fuel, to the extent that the alternate fuel is generated from municipal garbage and refuse which has undergone a separation process to minimize noncombustible materials, if the department publishes a written determination under this paragraph that:

1. Such use will not cause or exacerbate the violation of an ambient air quality standard or ambient air increment; and

2. Any emissions of hazardous air contaminants resulting from such use will not present a significant hazard to public health, safety or welfare or to the environment.

(4) EXEMPT RELOCATIONS. (a) In addition to the approved relocated sources which are exempt from the need for an additional permit under s. 144.391 (5), Stats., and the relocation of an emissions unit within the contiguous property of an attainment area major source, no construction or modification and new operation permit is required for the relocation of an emissions unit within the contiguous property of a minor source or a nonattainment area major source if:

1. The relocation of the emissions unit is not prohibited by any permit, plan approval or special order applicable to the source;

2. The emissions unit will not be modified;

3. The emissions unit meets all applicable emission limitations; and

4. The emissions unit's stack height or stack gas exit velocity or temperature will not be decreased.

(b) If the criteria in par. (a) 1., 2., and 3. are met but the emissions unit's stack height or stack gas exit velocity or temperature will be decreased, no construction or modification and new operation permit is required for the relocation of the emissions unit if the allowable emissions from the source will not cause or exacerbate the violation of an ambient air quality standard or ambient air increment.

(5) EXEMPT REPLACEMENTS. No construction or modification and new operation permit is required for the replacement of a source if:

(a) The replacement is for only a portion of a basic emissions unit;

(b) Such replacement is not prohibited by any permit, plan approval or special order applicable to the source; and

(c) The essential components of the basic emissions unit are not replaced through several partial replacements within a 12-month period.

(6) SCOPE OF EXEMPTION. (a) Exemption or the granting of an exemption under this section from the requirement to obtain a permit does not relieve any person from compliance with the emission limitations of this chapter, the air quality requirements of ch. NR 155, the reporting requirements of ch. NR 101, or with any other provision of law.

(b) If a source undergoes a modification which is exempt from the requirement to obtain a construction or modification and new operation permit under sub. (3) or s. 144.391 (4), Stats., it will not for this reason be treated as a modified source for purposes of the emission limitations under this chapter.

(c) Subsequent to May 1, 1983, if a person constructs or modifies a stationary source in increments which individually are exempt from the requirements for a permit under this section, the person is required to obtain a construction or modification and new operation permit for the source prior to commencing construction or modification of the increment which in combination with the other increments occurring since July 1, 1975 or since the date of the last construction or modification and new operation permit or plan approval issued to the stationary source, whichever is later, will:

1. Emit sulfur dioxide, carbon monoxide or nitrogen oxides at a rate of more than 9 pounds per hour for each pollutant emitted, without considering pollution control equipment;

2. Emit particulate matter or organic compounds at a rate of more than 5.7 pounds per hour for each pollutant emitted, without considering pollution control equipment; or

3. Emit any of the following air contaminants at a rate greater than the applicable emission rate listed:

a. Fluorides, 3 tons per year;

b. Hydrogen sulfide, 10 tons per year;

c. Reduced sulfur compounds, 10 tons per year;

d. Total reduced sulfur, 10 tons per year;

e. Vinyl chloride, 1 ton per year.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr. Register, June, 1975, No. 234, eff. 7-1-75; am. (1), renum. (2) and (3) to be (3) and (4) and am., cr. (2), Register, April, 1977, No. 256, eff. 5-1-77; r. and recr. Register, April, 1983, No. 328, eff. 5-1-83; reprinted to correct error in (2) (a) 8. , Register, July, 1983, No. 331.

NR 154.05 Action on applications. (1) Within 30 days after receipt of 2 copies of the plans, specifications and other information provided pursuant to s. 144.39 (1), Stats., needed to allow the department to analyze whether or not the source is in compliance with appropriate air pollution statutes and rules, or within 30 days after receipt of a notice of intent for construction of a source which does not require submittal of plans, specifications or other information, the department shall:

(a) Make a preliminary determination of whether the source should be approved, approved with conditions in accordance with sub. (9) or (10) of this section, or disapproved.

(b) Make available in at least one location in each region in which the source would be constructed a copy of all nonconfidential materials submitted by the owner or operator, a copy of the department's analysis and preliminary determination, and a copy or summary of other materials, if any, considered by the department in making its preliminary determination.

(c) Notify the applicants, interested members of the public, and appropriate federal, local and state officials of the proposed project, of the department's preliminary determination, and of the opportunity for public comment.

(d) Place a notice in a newspaper of general circulation in each region in which the source would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the department's preliminary determination on the approvability of the source.

(2) Public comments submitted in writing within 30 days after the date of said public notice shall be considered by the department in making its final decision on the application. The applicant may submit a written response to any comments submitted by the public no later than 10 days after the close of the public comment period. The department shall consider the applicant's response in making its final decision. All comments shall be made available for public inspection in at least one location in the region in which the source would be located.

(3) (a) The department shall take final action on the source after the close of the public comment period and after reviewing any response the applicant wishes to make to public comments. The department shall, by order, notify the owner or operator of the source in writing of its approval, conditional approval or disapproval of the proposed source. Said order must be issued within 30 days of the close of this public comment

period and shall be made available for public inspection in at least one location in the region in which the source would be located. Construction may proceed only after an order granting approval or conditional approval has been received from the department and must proceed in accordance with the plans, specifications, and other information submitted and in accordance with any conditions imposed by the department.

(b) Notwithstanding any other provision appearing in this chapter, the department may not approve or disapprove any application until the department has discharged its duties under s. 1.11, Stats.

(4) For a direct source, the department shall issue an order prohibiting construction if it determines that the affected facility will:

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(a) Cause a violation of any control strategy of the state implementation plan.

(b) Cause or exacerbate a violation of any ambient air quality standard in any region or portion thereof.

(c) Degrade the air quality of the area sufficiently to prevent the construction of any other stationary source, for which plans are received by the department prior to the commencement of the plan review period for the affected facility, from being approvable under these rules.

(5) For an indirect source other than a highway project or an airport, the department shall issue an order prohibiting construction if it determines that the affected facility will:

(a) Cause a violation of any control strategy of the state implementation plan.

(b) Cause or exacerbate a violation of either ambient air quality standard for carbon monoxide in any region or portion thereof.

(c) Raise the carbon monoxide level in the area sufficiently to prevent the construction of any other stationary source, for which plans are received by the department prior to the commencement of the plan review period for the affected facility, from being approvable under these rules.

(6) For a highway project subject to this paragraph, the department shall issue an order prohibiting construction if it determines that the affected facility will:

(a) Cause a violation of any control strategy of the state implementation plan.

(b) Cause or exacerbate a violation of either ambient air quality standard for carbon monoxide in any region or portion thereof.

(c) Degrade the air quality along the highway corridor sufficiently to prevent construction of any other indirect source, for which plans are received by the department prior to the commencement of the plan review period for the affected facility, from being approvable under these rules.

(d) The determination pursuant to subsections (6) (b) and (c) of this section shall be made by evaluating the anticipated concentrations of carbon monoxide at nearby receptor or exposure sites which will be affected by the mobile source activity expected on the highway for the 10-year period following the expected date of completion, using traffic flow characteristic guidelines published by the U.S. environmental protection agency, appropriate atmospheric diffusion models, and/or any other reliable analytic method.

(e) For any new highway project with an anticipated average daily traffic volume of 50,000 or more vehicles per day within 10 years of construction or any highway modification project which will increase the average daily traffic volume by 25,000 vehicles per day or more within 10 years after modification, the department may require the following in addition to the requirements of subsection (6) (d) of this section for consideration in determining the approvability of the affected facility.

The expected concentrations of carbon monoxide, photochemical oxidants and nitrogen dioxide shall be estimated for the 10-year period following completion of construction or modification using an areawide air quality analysis or other modeling technique approved by the department.

(7) For an airport subject to this paragraph, the department shall issue an order prohibiting construction if it determines that the affected facility will:

(a) Cause a violation of any control strategy of the state implementation plan.

(b) Cause or exacerbate a violation of either ambient air quality standard for carbon monoxide in any region or portion thereof.

(c) The determination pursuant to subsection (7) (b) of this section shall be made according to department guidelines. These guidelines may include the following:

1. All emissions from air contaminant sources at the airport, as well as emissions from the development of other new stationary sources expected to occur within 3 miles of the perimeter of the airport, will be added together in order to determine the aggregate impact on air quality for the 10-year period following the expected date of completion.

2. An areawide air quality analysis, or other modeling technique approved by the department will be used to determine the expected ambient concentration of carbon monoxide following construction or modification.

3. For highway projects and parking facilities specified under subsection (7) (c) of this section which are associated with airports, the applicable procedures specified in subsections (6) (d) and (e) of this section will be used.

(d) In addition to the requirements of subsection (7) (c) of this section, the department may require that an areawide air quality analysis or other modeling technique approved by the department be used to determine the expected ambient concentrations of photochemical oxidants and nitrogen dioxide following construction or modification for consideration in determining the approvability of the affected facility.

(8) The air quality impact of a proposed stationary source will be determined at such locations where people might reasonably be exposed for time periods consistent with the ambient air quality standards for the pollutants for which an analysis is carried out.

(9) Whenever a stationary source as proposed by an owner or operator's application would not be permitted to be constructed for failure to meet the tests set forth in subsections (4), (5), (6) or (7) of this section, the department may, instead of issuing an order prohibiting construction, grant a conditional approval which imposes reasonable conditions related to the air quality aspects of the proposed facility so that such facility, if constructed or modified in accordance with such conditions, could meet the tests set forth in subsections (4), (5), (6) or (7) of this section. For indirect sources, such conditions may include, but are not limited to:

(a) Binding commitments to roadway improvements or additional mass transit facilities to serve the facility secured by the owner or operator from governmental agencies having jurisdiction thereof.

(b) Binding commitments by the owner or operator to specific programs for mass transit incentives for the employes and patrons of the source.

(c) Binding commitments by the owner or operator to construct, modify or operate the facility in such a manner as may be necessary to achieve the traffic flow characteristics which have been determined not to cause violations of the national standards for carbon monoxide.

(10) Notwithstanding the provisions relating to modified stationary sources contained in NR 154.04(1), the department may condition any approval by reducing the extent to which the facility may be further modified without resubmission for approval under this paragraph.

(11) Any owner or operator who fails to construct a stationary source in accordance with the application as approved by the department; any owner or operator who fails to construct and operate a stationary source in accordance with conditions imposed by the department under subsection (9) of this section; any owner or operator who modifies a stationary source in violation of conditions imposed by the department under subsection (10) of this section; or any owner or operator of a stationary source subject to this section who commences construction or modification thereof after the effective date of these rules, without applying for and receiving approval hereunder, shall be considered in violation of this chapter.

(12) Approval to construct or modify a stationary source other than an airport or a highway section shall become invalid if construction or modification is not commenced within 24 months after the date when written approval was issued by the department. The department may extend such time period for up to 12 months on written request upon satisfactory showing that an extension is justified.

(13) Approval to construct or modify an airport shall become invalid if construction or modification is not commenced within 4 years after the date when written approval was issued by the department. The department may extend such time period for 2 years on written request.

(14) Approval to construct or modify for a highway project shall become invalid if construction or modification is not commenced within 6 years after the date when written approval was issued by the department. The department may extend such time period for up to 3 years on written request.

(15) Approval to construct or modify shall not relieve any owner or operator of the responsibility to comply with the emission limits of this chapter, the air quality standards of Wis. Adm. Code chapter NR 155 or the control strategies of all local, state and federal regulations which are part of the state implementation plan.

(16) The department may share review and public comment responsibilities for a source which is to be constructed by another agency of the state with such agency if the procedures followed by the agency fulfill the requirements of these subsections. Preliminary determination of the

approvability of the source, evaluation of public comment on its air quality impact, and final approval or disapproval shall be the responsibility of the department.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr. Register, June, 1975, No. 234, eff. 7-1-75; r. (1), (2) renum. to be (1) and am., cr. (2), renum. (4) to (15) to be (5) to (16) renum. (3) to be (4), cr. (3), Register, April, 1977, No. 256, eff. 5-1-77; am. (4), Register, March, 1978, No. 267, eff. 4-1-78.

NR 154.055 Relocation of portable sources. (1) No person shall cause, suffer, allow or permit the relocation to a new site, without first meeting the requirements of this section, of a portable source:

(a) Which can burn coal, coke or other solid fuel at a heat input rate greater than one million BTU per hour.

(b) Which can burn distillate oil (fuel oil), crude oil or residual oil at a heat input greater than 5 million BTU per hour.

(c) Which can burn gaseous fuel at a heat input rate greater than 30 million BTU per hour.

(d) Which emits or may emit, with any emission control equipment inoperative more than 6 pounds per hour of any air contaminant or which causes objectionable odors. In those cases where this size limitation applies as well as another of the limitations above, the more restrictive limitation shall be used.

(2) For portable sources operating under a plan approval pursuant to NR 154.01(3)(b), NR 154.04 and NR 154.05, relocation to a different site shall be approved, approved with conditions, or denied by the department in writing within 30 days after receipt of a completed site change form to be supplied by the department.

(3) The department shall approve relocation of a portable source if:

(a) The source meets the applicable emission limits.

(b) Operation at the proposed new site will not cause nuisance conditions.

(c) Operation at the new site will not cause a violation of any control strategy of the state implementation plan or cause or exacerbate a violation of any air quality standard.

(4) In applying for relocation approval an applicant may request approval of more than one site. If more than one site is approved, the portable source may be relocated from one approved site to another approved site without the submission of an additional site change form to the department. However, the department shall be notified of any such relocation to another approved site prior to the commencement of operations thereon.

History: Cr. Register, April, 1977, No. 256, eff. 5-1-77.

NR 154.06 Source reporting, recordkeeping, testing, inspection and operation. (1) NOTICE OF HAZARDOUS SUBSTANCE AIR SPILLS. (a) Persons possessing or controlling a hazardous substance shall immediately notify the department of any hazardous emission not in conformity with a permit or allowed by the department under this chapter. Notice

shall be given as required by s. 144.76, Stats., and chapter NR 158, Wis. Adm. Code.

(2) REPORTING. (a) When requested by the department, a person shall furnish to the department information to locate and classify air contaminant sources according to the type, level, duration, frequency and other characteristics of emissions and such other information as may be necessary. The information shall be sufficient to evaluate the effect on air quality and compliance with these rules.

(b) The owner or operator of a source requested to submit information under par. (a) may subsequently be required to submit annually, or at such other intervals as specified by the department, reports detailing any changes in the nature of the source since the previous report and the total annual quantities of the air contaminants emitted.

(c) When requested by the department, the owner or operator of a source to which this chapter applies shall submit to the department a standard operating procedure which includes a detailed description of process and emission control equipment startup, operating and shutdown procedures designed to minimize emissions.

(d) When stack or performance tests required by the department are performed by a person other than the department, the test results shall be furnished to the department within 30 days unless the department provides, in writing, a 30-day extension of this deadline. Results of stack or performance tests submitted to the department shall include information from the instrumentation specified in sub. (5) taken at the time of the tests, along with copies of the original data sheets, nozzle and stack diameter, weight of material sampled and other information needed to evaluate the stack or performance of tests.

(e) The department shall furnish a report of stack or performance tests or inspections it conducts to a representative of the source within 60 days after the testing or inspection is completed.

(f) Except where sub. (1) requires immediate notice of hazardous substance air spills, a person shall report to the department within 8 hours following the onset of a malfunction or other event not reported in advance to the department which causes or may cause any emission limitation, including the visual emission limit, to be violated. A person shall also report to the department emissions in excess of the emissions provided for in a plan approved pursuant to NR 154.09 (1) (b). The person shall report the cause and duration of the violation, the period of time considered necessary for correction, and measures taken to minimize emissions during the period.

(g) A person required to operate a continuous monitoring system or monitoring device shall notify the department within 1 week of any shutdown, breakdown, or malfunction of such device or system.

(h) A person shall report to the department in advance schedules for planned shutdown and startup of air pollution control equipment and the measure to be taken to minimize the down time of the control equipment. Scheduled maintenance or startup of other equipment which causes an emission limitation to be exceeded shall also be reported in advance to the department. Advance reporting under this paragraph

shall not relieve any person from the duty to comply with any applicable emission limitation.

(3) RECORDKEEPING. (a) The owner or operator of any source to which this chapter applies shall maintain records of all testing and monitoring conducted under this section, records detailing all malfunctions which cause any applicable emission limitation to be exceeded, including logs to document the implementation of the plan required by sub. (9), records detailing all activities relating to any compliance schedule approved by the department under this chapter and any other records relating to the emission of air contaminants which may be requested in writing by the department.

(b) Copies of all records required under par. (a) shall be retained by the owner or operator for a period of 3 years or for such other period as may be specified by the department.

(4) ACCESS TO RECORDS. (a) No person shall deny information or access to records relating to emissions to an authorized representative of the department.

(5) METHODS AND PROCEDURES FOR SOURCE TESTING. (a) The department shall be notified 10 days in advance of stack or performance tests required by the department to afford it the opportunity to have a representative present to witness the testing procedures. Said notice shall provide a test plan which includes:

1. A description of the sampling equipment.

2. A description of the processes, operations, and equipment venting to the stack.

3. A description of process or operation variables which affect the air contaminant source's emissions.

(b) Sources of air contaminants other than volatile organic compounds. 1. The test plan required under par. (a) shall include, in addition to the information required under par. (a), a sketch or sketches showing the relative position and elevations of all processes or operations venting to the test stack and also the position of the sampling ports relative to the nearest upstream and downstream gas flow disturbance, and a cross-sectional sketch showing:

a. Stack configuration at the sampling location.

b. Sampling port locations.

c. Sampling point positions of each port.

2. The department may require: Provision for sampling ports, a safe work area for tests crews, safe access to the sampling platform, utilities for sampling and testing equipment, stack or performance tests performed by or under the direction of a qualified engineer or person with demonstrated ability in this field, instrumentation to monitor and record emission data, stack or performance tests performed in compliance with emission test guidelines developed by the department and submitted to the tester prior to the conducting of the test, or transfer of the test data sheets or sample collecting media to the department's witness for evaluation.

3. Performance tests or stack tests shall follow the guiding principles described in ASME performance test code 27 with a sampling train utilizing a velocity measuring probe during sampling and an integrating gas volume meter for existing direct or portable sources, or sampling methods required or approved by the United States environmental protection agency for direct or portable sources and for hazardous pollutants. Other sampling methods may be prescribed by the department or must have prior approval of the department.

Note: See american society of mechanical engineers performance test code 27, copyright 1957. Copies of PTC-27-1957 are available for inspection in the offices of department of natural resources, and secretary of state and revisor of statutes, Madison, Wisconsin, and may be obtained for personal use from the American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017.

(c) Volatile organic compound sources. 1. The owner or operator of any volatile organic compound source to which NR 154.13 applies shall demonstrate compliance by methods approved by the department.

2. The results of volatile organic compound emissions compliance testing shall only be accepted if prior notification has been supplied to the department as required under par. (a).

(6) INSTRUMENTATION FOR AIR POLLUTION CONTROL EQUIPMENT. (a) The department may require provisions for instrumentation to determine the efficiency of control equipment. Such instrumentation may include devices to measure voltage, or pressure drop across the control equipment; amperage, exhaust flow rates, or scrubbing solution flow rates to, or in, the control equipment; temperature in the control equipment; or other information determined to be necessary by the department.

(7) ENTRY FOR INSPECTION. (a) No person shall deny entry at any reasonable time to an authorized representative of the department for purposes of inspection, or at any time when an air pollution episode condition exists or is believed imminent.

(8) CIRCUMVENTION. (a) No person shall cause, allow or permit the installation or use of any article, machine, equipment, process, or method, which conceals an emission which would otherwise constitute a violation of an applicable rule unless written approval has been obtained from the department. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance and the unnecessary separation of an operation into parts to avoid coverage by a rule that applies only to operations larger than a specified size.

(9) MALFUNCTION PREVENTION AND ABATEMENT PLANS. (a) The owner or operator of any direct or portable source which may emit hazardous substances or emits more than 15 pounds in any day or 3 pounds in any hour of any air contaminant for which air standards have been adopted shall prepare a malfunction prevention and abatement plan to prevent, detect and correct malfunctions or equipment failures which may cause any emission limitation to be violated or which may cause air pollution. The plan shall be in writing, updated as needed, and shall include:

1. Identification of the individual (s) responsible for inspecting, maintaining, and repairing the air pollution control equipment.

2. The maximum intervals for inspection and routine maintenance.

3. A description of the items or conditions that will be checked.

4. A listing of materials and spare parts that will be maintained in inventory.

5. An identification of the source and air pollution control equipment operation variables that will be monitored in order to detect a malfunction or failure; the correct operating range of these variables; and a description of the method of monitoring or surveillance procedures, or a reference to specific pages containing this information in manuals or other documents kept by the owner or operator.

6. A description of the corrective procedures that will be taken in the event of a malfunction or failure in order to achieve and maintain compliance with the applicable emission limitations as expeditiously as possible but not longer than the time necessary to discontinue operation of the source consistent with safe operating procedures.

7. Such other information as the department shall deem pertinent.

(b) The department may order any owner or operator to submit the plan required by par. (a) for review and approval. The department may amend the plan if deemed necessary for malfunction prevention or the reduction of excess emissions during malfunctions.

(c) No owner or operator shall fail to carry out a plan required under par. (a) or as amended under par. (b).

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr. (2), r. (3), renum. (4) to (6) to be (3) to (5), renum. (7) to be (6) and am., cr. (7), Register, June, 1975, No. 234, eff. 7-1-75; r. (2) (c), Register, April, 1976, No. 224, eff. 5-1-76; r. and recr. Register, September, 1979, No. 285, eff. 10-1-79.

NR 154.07 County and regional programs. Approved local programs must be compatible with these rules and the implementation plan, avoid duplication, and provide:

(1) Sufficient staff and resources to carry out the program.

(2) An air pollution control officer responsible for the program.

(3) Record keeping and reporting to the department of emission inventory, air quality monitoring, enforcement status, and other data on a standardized basis and in the form prescribed by the department.

(4) An agreement defining the responsibilities of the department and local agency to achieve an effective program.

(5) Countywide or regionwide enforcement of regulations involving:

(a) Open, backyard, and leaf burning.

(b) Ringelmann and opacity standards on stationary, semistationary, and mobile sources.

(c) Incinerators rated at or less than 50 pounds per hour of solid wastes (dry basis) or liquid wastes.

(d) Fugitive dust, odors, and other pollutants from sources other than those specified in section NR 154.04.

(e) Fugitive dust, odors, and other pollutants from sources specified in s. NR 154.04, where authorized by the department.

(f) Zoning restrictions where air pollution considerations are involved.

(6) Consultation on traffic planning, approval, and implementation where air pollution considerations are involved, such as freeways, highway relocation and highway widening.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; am. (5)(c), Register, June, 1975, No. 234, eff. 7-1-75.

NR 154.08 Enforcement and penalties. (1) If the department has reason to believe that a violation of ss. 144.30 to 144.426 or 144.96, Stats., this chapter, ch. NR 101 or 155, or of a permit, plan approval or special order issued by the department under ss. 144.30 to 144.426 or 144.96, Stats., has occurred, the department may proceed under s. 144.423, Stats.

(2) Any person who violates any provision of ss. 144.30 to 144.426 or 144.96, Stats., this chapter, ch. NR 101 or 155, or a permit or special order issued by the department under ss. 144.30 to 144.426 or 144.96, Stats., is subject to the penalties provided under s. 144.426, Stats.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr. Register, April, 1983, No. 328, eff. 5-1-83.

NR 154.09 Emissions prohibited. (1) No person shall cause, suffer, allow, or permit emissions into the ambient air in excess of the limits set in these rules, except:

(a) When an approved program or plan with a time schedule for correction has been undertaken and correction is being pursued with diligence.

(b) When emissions in excess of the limits are temporary and due to scheduled maintenance, startup, or shutdown of operations carried out in accord with a plan and schedule approved by the department.

(c) The use of emergency or reserve equipment needed for meeting of high peak loads, testing of the equipment, or other uses approved by the department. Such equipment must be specified in writing as emergency or reserve equipment by the department. Upon startup of this equipment notification must be given to the department which may or may not give approval for continued equipment use.

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

NR 154.10 Limitations on open burning. (1) Open burning is prohibited with the following exceptions:

(a) Burning of brush or weeds on agricultural lands.

(b) Fires set for practice and instruction of firemen, or testing of fire fighting equipment.

(c) Backfires to control forest fires or fires set for forest or wildlife habitat management with approval of the department where no reasonable alternative is available.

(d) Burning of explosive or dangerous material for which there is no other safe means of disposal.

(e) Burning of small amounts of dry combustible rubbish (not to include wet combustible rubbish, garbage, oily substances, asphalt, plastic or rubber products) except where prohibited by local ordinance.

(f) Burning at rural or isolated solid waste disposal sites outside of the Southeast Wisconsin Intrastate AQCR that serve less than 2,500 people and are licensed to burn waste under s. NR 151.18 of the solid waste disposal standards, or burning of special waste where permits are obtained from the department.

(g) Outdoor fires for cooking, ceremonies, or recreation.

(h) Burning of trees, limbs, stumps, brush or weeds for clearing or maintenance of rights-of-ways outside of the Southeast Wisconsin Intrastate AQCR.

(i) Burning of trees, wood, brush, or demolitions materials (excluding asphaltic, or rubber materials) by such methods approved by the department.

(j) Small open flames for welding, acetylene torches, safety flares, heating tar, or similar applications.

(k) Burning of gaseous or liquid waste in a manner approved by the department.

(l) Burning of small amounts of dry leaves and dry plant clippings except where prohibited by local ordinance.

(2) All allowed open burning shall be conducted in a safe pollution free manner, when wind and weather conditions are such as to minimize adverse effects and in conformance with local and state fire protection regulations.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; am. (1) (f) and (k), renum. (1) (m) to be (1) (l), Register, June, 1975, No. 234, eff. 7-1-75.

NR 154.11 Control of particulate emissions. (1) GENERAL LIMITATIONS. No person shall cause, allow, or permit particulate matter to be emitted into the ambient air which substantially contributes to exceeding of an air standard, or creates air pollution.

(2) FUGITIVE DUST. No person shall cause, allow, or permit any materials to be handled, transported, or stored without taking precautions to prevent particulate matter from becoming airborne. Nor shall a person allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted or demolished without taking such precautions.

(a) Such precautions shall include, but not be limited to:

1. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, or construction operations.

2. Application of asphalt, oil, water, suitable chemicals, or plastic covering on dirt roads, material stockpiles, and other surfaces which can

create airborne dust, provided such application does not create a hydrocarbon, odor, or water pollution problem.

3. Installation and use of hoods, fans, and air cleaning devices to enclose and vent the areas where dusty materials are handled.

4. Covering or securing of materials likely to become airborne while being moved on public roads, railroads, or navigable waters.

5. Conduct of agricultural practices such as tilling of land or application of fertilizers in such manner as not to create air pollution.

6. The paving or maintenance of roadways or parking lots so as not to create air pollution.

(b) In addition to meeting the requirements of par. (a), any direct or portable source located in a nonattainment area identified under s. NR 154.03 (1) for suspended particulate matter; and any direct or portable source located near such areas whose aggregate fugitive dust emissions may cause an impact on the ambient air quality in such areas equal to or greater than one microgram per cubic meter (annual concentration) or 5 micrograms per cubic meter (maximum 24-hour concentration), as determined by the analysis under s. NR 154.03 shall meet the following RACT requirements:

1. Storage piles having a material transfer greater than 100 tons in any year: a. Storage piles of material having a silt content of 5% to 20% shall be treated with water, surfactants, stabilizers or chemicals; draped; or enclosed on a minimum of 3 sides. Access areas surrounding storage piles shall be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust from vehicle traffic.

b. Storage piles of materials having a silt content of 20% or more shall be completely enclosed or draped except any part being worked, loaded or unloaded. Access areas surrounding storage piles shall be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust from vehicle traffic.

2. Materials handling operations: a. Materials handling operations, including but not limited to crushing, grinding, mixing, screening, compacting, conveying, handling of waste material with more than 5% silt, and loading and unloading of railcar, truck, ship or barge shall have fugitive emissions controlled to 20% opacity when wind speeds are less than 25 miles per hour except for 3 minutes in any hour when fugitive emissions may equal 50% opacity.

b. Any device used to control fugitive emissions from materials handling operations which has a discharge to the ambient air shall be controlled equal to or less than 0.20 pounds of particulate matter per 1000 pounds of exhaust gas.

3. Process fugitive emissions: a. Any device used to control fugitive particulate emissions from processes which has a discharge to the ambient air shall be controlled to an exhaust gas concentration equal to or less than 0.20 pounds of particulate matter per 1000 pounds of exhaust gas.

b. Emissions from any building or structure egress other than a stack shall be controlled such that visible emissions shall not exceed 20%

opacity except for 3 minutes in any hour when fugitive emissions may equal 50% opacity.

(c) In addition to meeting the requirements of par. (a), private industrial or commercial trafficable areas, roads and driveways which are located in or within one mile of a nonattainment area identified under s. NR 154.03 (1) for suspended particulate matter, are 20,000 square feet or more in total area, are on contiguous property under common ownership or control, and are subject on 3 separate days during any 14 consecutive day period to motor vehicle traffic at any point within the roads, driveways or trafficable areas at a rate equal to or greater than 10 motor vehicles per 60 minute period, shall meet the following RACT emission limitations:

1. Be paved with asphalt, concrete or other material approved by the department, or use other methods of dust control which the department approves as representing RACT for the particular road, driveway or trafficable area. Such other methods of dust control which may be approved by the department include but are not limited to periodic application of water, oil or suitable chemicals. In reviewing and acting upon plans required by par. (d) for compliance with this paragraph, the department shall consider the effects of the use of paving or other methods of dust control upon the rate and volume of surface water runoff and water quality.

2. If paved, be kept reasonably free of material likely to become airborne, through a program of periodic cleaning.

(d) When a direct or portable source is subject to the emission limitations of par. (b), (c) or (e) the owner or operator may not exceed the following increments of progress in achieving compliance commencing with the nonattainment determination under s. NR 154.03 (1):

1. Submit plans for compliance within 8 months.

2. Award any necessary contracts within 15 months.

3. Commence construction, installation or modification of emission control techniques required under pars. (b) 1. and 2.a., (c) and (e) within 18 months.

4. Commence construction, installation or modification of emission control techniques required under par. (b) 2.b. and 3. within 24 months.

5. Complete construction, installation or modification of emission control techniques required under pars. (b) 1. and 2.a., (c) and (e), achieve compliance, and so certify to the department within 21 months.

6. Complete construction, installation or modification of emission control techniques required under par. (b) 2.b. and 3. within 30 months and achieve final compliance and so certify to the department within 33 months.

(e) In addition to meeting the requirements of par. (a), any roadway or public trafficable area which is located in or within one mile of a nonattainment area identified under s. NR 154.03 (1) for suspended particulate matter and which is subject on 3 separate days during any 14 consecutive day period to motor vehicle traffic at any point within the roadway or public trafficable area at a rate equal to or greater than 10

motor vehicles per 60 minute period shall meet the RACT emission limitations of this paragraph. For purposes of this paragraph, ownership or control of different portions of a roadway or public trafficable area by different municipalities, interstate agencies, state agencies or federal agencies may not be considered in determining the contiguous area of the roadway or public trafficable area.

1. If paved, roadways and public trafficable areas covered by this paragraph shall be kept, through a program of periodic cleaning, reasonably free of material likely to become airborne. This subdivision does not apply to a public trafficable area of less than 20,000 contiguous square feet in area unless the public trafficable area is also a roadway.

2. If unpaved, roadways and public trafficable areas covered by this paragraph shall be paved with asphalt, concrete or other material approved by the department, or use other methods of dust control which the department approves as representing RACT for the particular roadway or public trafficable area. Such other methods of dust control which may be approved by the department include but are not limited to periodic application of water, oil or suitable chemicals. In reviewing and acting upon plans required by par. (d) for compliance with this paragraph, the department shall consider the effects of the use of paving or other methods of dust control upon the rate and volume of surface water runoff and water quality. This subdivision does not apply to roadways or to public trafficable areas which have less than 20,000 contiguous square feet of unpaved surface area.

(3) PARTICULATE EMISSION LIMITS FOR PROCESSES. No person shall cause, allow, or permit the emission of particulate matter to the ambient air from a direct or portable source involving a process in excess of the following limitations:

(a) All direct and portable sources on which construction or modification is commenced after April 1, 1972 shall meet the emission limitations of this paragraph.

1. Direct or portable sources other than those specified in sub. (3) (a) 2.; emissions in excess of:

a. Any process not otherwise covered by sub. (3) (a): emissions calculated by the use of the equation, $E = 3.59\ P^{0.62}$ for process weight rates up to 60,000 pounds per hour; by use of the equation $E = 17.31\ P^{0.16}$ for process weight rates of 60,000 pounds per hour or more; (E is the allowable emissions in pounds per hour and P is the process weight rate in tons per hour) or in concentrations greater than those listed in sub. (3) (b), whichever is more restrictive. Some examples of these calculations are given in the following table.

Process Weight Rate (Lbs/Hr.)	Emission Rate (Lbs/Hr.)
50	0.36
100	0.56
500	1.52
1,000	2.33
5,000	6.33
10,000	9.74
20,000	14.96
60,000	29.57
80,000	31.23
120,000	33.33
160,000	34.90
200,000	36.16
400,000	40.41
1,000,000	46.79

b. Cement kilns: 0.30 pounds of particulate per ton of feed to the kiln.

c. Cement clinker coolers: 0.10 pounds of particulate per ton of feed to the kiln.

2. Direct or portable sources specified hereunder on which construction or modification is commenced after February 1, 1975; emissions in excess of:

a. Asphalt concrete plants (any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing asphalt concrete; and the loading, transfer, and storage systems associated with emission control systems): 0.04 grains per dry cubic foot at standard conditions (90 milligrams per dry cubic meter at standard conditions).

b. Petroleum refineries (fluid catalytic cracking unit catalyst regenerators or fluid catalytic cracking unit incinerator-waste heat boilers):

1) 1.0 pound per 1,000 pounds (1.0 kilogram per 1,000 kilograms) of coke burn-off in the catalyst regenerator.

2) In those instances in which auxiliary liquid or solid fossil fuels are burned in the fluid catalytic cracking unit incinerator-waste heat boiler,

particulate matter in excess of that permitted by par. (a) 2.b.1) may be emitted to the atmosphere, except that the incremental rate of particulate emissions shall not exceed 0.10 pounds per million BTU (0.18 grams per million calories) of heat input attributable to such liquid or solid fuel.

c. Secondary lead smelters (blast or cupola furnaces and reverberatory furnaces): 0.022 grains per dry cubic foot at standard conditions (50 milligrams per dry cubic meter at standard conditions).

d. Secondary brass and bronze ingot production plants (reverberatory furnaces of 2.205 pounds or greater production capacity): 0.022 grains per dry cubic foot at standard conditions (50 milligrams per dry cubic meter at standard conditions).

e. Iron and steel plants (basic oxygen process furnaces): 0.022 grains per dry cubic foot at standard conditions (50 milligrams per dry cubic meter at standard conditions).

(b) All direct and portable sources on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limitations of this paragraph.

1. Direct or portable sources specified hereunder; emissions in excess of:

a. Cupolas melting more than 200 tons of metal in any year: 0.45 pounds of particulate matter per 1,000 pounds of gas.

b. Electric arc or induction furnaces: 0.1 pounds of particulate matter per 1,000 pounds of gas.

c. Open hearth furnaces: 0.2 pounds of particulate matter per 1,000 pounds of gas.

d. Basic oxygen furnaces: 0.1 pounds of particulate matter per 1,000 pounds of gas.

e. Sintering plants: 0.2 pounds of particulate matter per 1,000 pounds of gas.

f. Air melting furnaces: 0.3 pounds of particulate matter per 1,000 pounds of gas.

g. Heating or preheating furnaces: 0.3 pounds of particulate matter per 1,000 pounds of gas.

h. Blast furnaces: 0.2 pounds of particulate matter per 1,000 pounds of gas.

i. Asphalt, concrete, or aggregate mix plants: 0.3 pounds of particulate matter per 1,000 pounds of gas.

j. Cement kilns: 0.2 pounds of particulate matter per 1,000 pounds of gas.

k. Lime kilns: 0.2 pounds of particulate matter per 1,000 pounds of gas.

l. Cement clinker coolers: 0.3 pounds of particulate matter per 1,000 pounds of gas.

m. Grinding, drying, mixing, conveying, sizing, or blending: 0.2 pounds of particulate matter per 1,000 pounds of gas.

n. Grain processing or handling: 0.4 pounds of particulate matter per 1,000 pounds of gas.

o. Any other process not enumerated: 0.4 pounds of particulate matter per 1,000 pounds of gas.

(c) In addition to meeting the requirements of pars. (a) and (b), any direct or portable source located in or near a nonattainment area identified under s. NR 154.03 (1) for suspended particulate matter whose aggregate particulate emissions (excluding fugitive dust) may cause an impact on the ambient air quality in such areas equal to or greater than one microgram per cubic meter (annual concentration) or 5 micrograms per cubic meter (maximum 24-hour concentration) as determined by the analysis under s. NR 154.03 shall meet the following RACT emissions limitations:

1. Sources on which construction or modification was commenced after April 1, 1972 shall not emit more than the emissions limits of par. (a) or 0.20 pounds of particulate matter per 1000 pounds of exhaust gas, whichever is more restrictive.

2. Sources on which construction or modification was commenced on or before April 1, 1972 may not emit more than 0.20 pounds of particulate matter per 1000 pounds of exhaust gas.

(d) When a direct or portable source is subject to the emissions limitations of par. (c) or (e), the owner or operator shall not exceed the following increments of progress in achieving compliance commencing with the nonattainment determination under s. NR 154.03 (1):

1. Submit plans for compliance within 6 months.

2. Award any necessary contracts within 12 months.

3. Commence construction, installation or modification of any emission control system within 24 months.

4. Complete construction, installation or modification of any emission control system within 30 months.

5. Achieve final compliance with the applicable emission limitations and so certify to the department within 33 months.

(e) Notwithstanding par. (c), any cupola may emit up to, but not more than 0.25 pounds of particulate matter per 1000 pounds of exhaust gas.

(4) PARTICULATE EMISSION LIMITS FOR FUEL BURNING INSTALLATIONS. No person shall cause, allow, or permit the emission of particulate matter to the ambient air from any indirect heat exchanger, power or heating plant, fuel-burning installation, or pulp recovery furnace with maximum heat input more than one million BTU per hour in excess of one of the following limitations:

(a) All installations on which construction or modification is commenced after April 1, 1972 shall meet the emission limitations of this paragraph.

1. Installations of 250 million BTU per hour or less except as provided in subd. 2. hereof: 0.15 pounds of particulate matter per million BTU input to any stack.

2. Installations of 100 million BTU per hour or less which are not located in the Southeast Wisconsin Intrastate AQCR and which burn only wood, or wood simultaneously with liquid or gaseous fossil fuel: 0.5 pounds of particulate matter per million BTU input to any stack except that installations located in subregion 1 of the Lake Michigan Intrastate AQCR shall meet the requirements of sub. (4) (b) 2.a.

3. Installations of more than 250 million BTU per hour: 0.10 pounds of particulate matter per million BTU input to any stack.

(b) All installations on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limitations of this paragraph.

1. Installations throughout the state shall meet the following emission limitations:

a. All installations: emissions determined by use of figure 2 of the ASME Standard number APS-1 with the maximum emission irrespective of stack height of 0.60 pounds of particulate matter per million BTU input to any stack.

Note: See american society of mechanical engineers standard number APS-1, second edition, November, 1968, copyright 1969. Copies of standard number APS-1 are available for inspection in the offices of department of natural resources, the secretary of state and revisor of statutes, Madison, Wisconsin and may be obtained for personal use from the American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017.

2. Installations located in subregion 1 of the Lake Michigan Intrastate AQCR; in addition to meeting the emission limitations of sub. (4) (b) 1.a. of this section, these installations shall, by July 31, 1975, meet the following emission limitations:

a. All installations: emissions determined by use of figure 2 of the ASME Standard number APS-1 with the maximum emission irrespective of stack height of 0.30 pounds of particulate matter per million BTU input to any stack.

3. Installations located in the Southeast Wisconsin Instrastate AQCR, in addition to meeting the emission limitations of sub. (4) (b) 1.a., shall meet the following requirements:

a. Installations of 250 million BTU per hour or less (heat input of an installation shall follow ASME Standard number APS-1); maximum emission defined by the equation, $E = 0.3 - 0.0006I$ where I is heat input in millions of BTU per hour and E is maximum allowable particulate emissions in pounds per million BTU to any stack.

b. Installations of more than 250 million BTU per hour: maximum emission of 0.15 pounds of particulate matter per million BTU input to any stack.

(c) In addition to meeting the requirements of par. (a) or (b), all installations located in or near a nonattainment area identified under s. NR 154.03 (1) for suspended particulate matter whose aggregate particulate emissions (excluding fugitive dust) may cause an impact on the

ambient air quality in such areas equal to or greater than one microgram per cubic meter (annual concentration) or 5 micrograms per cubic meter (maximum 24-hour concentration) as determined by the analysis under s. NR 154.03 shall meet the following RACT emission limitations:

1. Installations of 100 million BTU per hour or less: maximum emission of 0.24 pounds of particulate matter per million BTU input to any stack.

2. Installations of more than 100 million BTU per hour on which construction or modification commenced on or before April 1, 1972: maximum emission of 0.15 pounds of particulate matter per million BTU input to any stack.

3. Installations of more than 100 million BTU per hour but of not more than 250 million BTU on which construction or modification commenced after April 1, 1972: maximum emission of 0.15 pounds of particulate matter per million BTU input to any stack.

4. Installations of more than 250 million BTU per hour on which construction or modification commenced after April 1, 1972: maximum emission of 0.10 pounds of particulate matter per million BTU input to any stack.

(d) When an installation is subject to the emission limitations of par. (c) the owner or operator may not exceed the following increments of progress in achieving compliance commencing with the nonattainment determination under s. NR 154.03 (1):

1. Submit plans for compliance within 6 months.

2. Award any necessary contracts within 12 months.

3. Commence construction, installation or modification of any emission control system within 24 months.

4. Complete construction, installation or modification of any emission control system within 30 months.

5. Achieve final compliance with the applicable emission limitations and so certify to the department within 33 months.

(e) Notwithstanding par. (c) 1. or 2., any fuel burning installation of 250 million BTU per hour or less on which construction or modification was commenced on or before April 1, 1972 may emit up to, but not more than, an emission rate defined by the equation $E = 0.3 - 0.0006I$ (where I is the heat input in millions of BTU per hour and E is the maximum allowable particulate emissions in pounds per million BTU to any stack) if, as of March 1, 1980 for installations which may cause an impact on primary or associated secondary nonattainment areas, or as of March 1, 1982 for installations which may cause an impact on any other secondary nonattainment area, the installation has an emission rate based on original design or equipment performance test conditions (whichever is more restrictive) which is less than the limit set by the above equation, and the emission control system of such installations has not been allowed to degrade more than 0.05 pounds per million BTU from original design or acceptance performance test conditions.

(5) PARTICULATE EMISSION LIMITS FOR INCINERATORS. No person shall cause, suffer, allow, or permit particulate matter, concentrations corrected to 12% carbon dioxide, to be emitted to the ambient air from any incinerator in excess of one of the following limitations:

(a) All incinerators on which construction or modification is commenced after April 1, 1972 shall meet the emission limits of this paragraph.

1. Incinerators other than those specified in sub. (5) (a) 2. of this section; emissions in excess of:

a. Incinerators rated at 4,000 pounds of waste per hour or more: 0.15 pounds of particulate per 1,000 pounds of exhaust gas.

b. Incinerators rated at over 500 pounds of waste per hour and less than 4,000 pounds of waste per hour: 0.20 pounds of particulate per 1,000 pounds of exhaust gas.

c. Incinerators rated at 500 pounds of waste per hour or less other than prefabricated domestic incinerators below 5 cubic feet capacity: 0.30 pounds of particulate matter per 1,000 pounds of exhaust gas.

d. Prefabricated domestic incinerators below 5 cubic feet capacity shall not exceed the performance emission requirements prescribed by the United States of America Standards Institute for domestic incinerators, standard Z21.6.

e. United States of America Standards Institute Approval Requirements for Domestic Gas-Fired Incinerators, number Z21.6, approved December 28, 1966, copyright 1967. Copies of Approval Requirements Z21.6 are available for inspection in the office of department of natural resources, Pyare Square Building, and secretary of state and revisor of statutes, State Capitol, Madison, Wisconsin and may be obtained for personal use from American Gas Association, Inc., 605 Third Avenue, New York, N.Y. 10016.

Note: The department of natural resources is located at 101 S. Webster Street.

2. Sewage treatment plant sludge and grit incinerators on which construction or modification is commenced after February 1, 1975; emissions shall not exceed 1.30 pounds per ton of dry sludge or grit input (0.65 grams per kilogram of dry sludge or grit input).

(b) All incinerators on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limits of this paragraph.

1. Incinerators located throughout the state; emissions in excess of:

a. Incinerators rated at over 500 pounds of waste per hour: 0.50 pounds of particulate per 1,000 pounds of exhaust gas.

b. Incinerators rated at 500 pounds of waste per hour or less: 0.60 pounds of particulate per 1,000 pounds of exhaust gas.

2. Incinerators located in subregion 1 of the Lake Michigan Intrastate AQCR or in the Southeast Wisconsin Intrastate AQCR; in addition to meeting the emission limits of sub. (5) (b) 1. of this section these incinerators shall, by July 31, 1975, meet the following emission limits:

a. Incinerators of 5 cubic feet capacity or more: 0.30 pounds of particulate per 1,000 pounds of exhaust gas.

b. Prefabricated domestic incinerators below 5 cubic feet capacity shall not exceed the performance emission requirements prescribed by the United States of America Standards Institute for domestic incinerators, standard Z21.6.

(6) VISIBLE EMISSIONS. No person shall cause, suffer, allow, or permit emissions into the ambient air from any direct or portable source in excess of one of the following limitations: Where the presence of uncombined water is the only reason for failure to meet the requirements of this subsection, such failure shall not be a violation of this section.

(a) All direct and portable sources on which construction or modification is commenced after April 1, 1972 shall meet the emission limits of this paragraph. In addition, all direct and portable sources located in subregion 1 of the Lake Michigan Intrastate AQCR or in the Southeast Wisconsin Intrastate AQCR on which construction or modification was commenced on or before April 1, 1972 shall, by July 31, 1975, meet the emission limits of this paragraph.

1. Direct or portable sources other than those specified in sub. (6) (a) 2. of this section; emissions of shade or density greater than number 1 of the Ringelmann chart or 20% opacity with the following exceptions:

a. When combustion equipment is being cleaned or a new fire started, emissions not to exceed number 4 of the Ringelmann chart or 80 % opacity for 5 minutes in any one hour. Combustion equipment may not be cleaned nor a fire started more than 3 times per day.

b. For stated periods of time, as permitted by the department, for such purpose as operating test, use of emergency or reserve equipment, or other good cause, provided no hazard or unsafe condition arises.

c. For direct or portable sources in operation on or before February 1, 1975, where performance test data taken concurrently with Ringelmann or opacity readings show the source to be in compliance with the emission limits but not the Ringelmann or opacity limits. In this case, Ringelmann or opacity limits shall be set at 0.5 Ringelmann or 10 % opacity above the average read during the stack test.

2. Direct or portable sources specified hereunder on which construction or modification is commenced after February 1, 1975; emissions of shade or density greater than:

a. Asphalt concrete plants (any combination of the following: dryers; systems for screening, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing asphalt concrete; and the loading, transfer, and storage systems associated with emission control systems): 20% opacity.

b. Petroleum refineries (fluid catalytic cracking unit catalyst regenerators and fluid catalytic cracking unit incinerator-waste heat boilers): 30% opacity, except for 3 minutes in any one hour.

c. Secondary lead smelters:

i. Blast or cupola furnaces and reverberatory furnaces: 20% opacity.

ii. Pot furnaces of more than 550 pounds (250 kilograms) charging capacity: 10% opacity.

d. Secondary brass and bronze ingot production plants:

i. Reverberatory furnaces of 2,205 pounds per hour (1,000 kilograms per hour) or greater production capacity: 20% opacity.

ii. Electric furnaces of 2,205 pounds per hour (1,000 kilograms per hour) or greater production capacity and blast or cupola furnaces of 550 pounds per hour (250 kilograms per hour) or greater production capacity: 10% opacity.

e. Sewage treatment plants (sewage sludge and grit incinerators): 20% opacity.

(b) All direct and portable sources on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limits of this paragraph. Direct and portable sources located in subregion 1 of the Lake Michigan Intrastate AQCR or in the Southeast Wisconsin Intrastate AQCR shall also meet the requirements of sub. (6) (a) of this section.

1. All direct or portable sources; emissions of shade or density equal to or greater than number 2 of the Ringelmann chart or 40% opacity. Exceptions listed in sub. (6) (a) 1. of this section shall apply.

(7) RACT REQUIREMENTS FOR COKING OPERATIONS. (a) This subsection applies to all coking operations upon which construction or modification commenced before September 1, 1981. Notwithstanding any other provision of this section, all requirements of this subsection shall be met on or before September 1, 1981.

(b) Visible emissions from charging procedures shall be limited by the application of RACT. RACT includes:

1. The use and maintenance of suitable jumper pipes and leveling bar smoke boots,

2. The use and maintenance of suitable seals on larry car drop sleeves and leveling bar smoke boots,

3. The use and maintenance of a steam aspiration system which provides maximum safe levels of negative pressure on the oven chamber during the charging operation, and

4. The completion of each charging procedure (including sweeping excess coal into the oven just charged) as quickly as possible.

(c) Fugitive emissions from pushing operations shall be captured by a traveling hood and controlled to not more than 0.08 pounds of particulate matter per 1000 pounds of exhaust gas. Any emissions escaping capture may not exceed 20% opacity for each pushing operation, as determined by the average of 6 consecutive observations made at 15 second intervals.

(d) There may be no visible emissions from 90% of the doors of all coke ovens in use; 95% of all coke oven charging port lids on ovens in use; and 90% of all offtake piping on ovens in use, except those open for

charging, pushing, cleaning, and maintenance as determined by a one pass observation.

(e) Quench towers for the application of water on hot coke shall be equipped with grit arrestors or equivalent equipment approved by the department. Water used in quenching shall not include coke by-product plant effluent, and total dissolved solids in make-up quenching water shall be less than 750 milligrams per liter.

(f) Coke oven combustion stacks may not emit more than 0.10 pounds of particulate matter per 1000 pounds of exhaust gas or have visible emissions greater than 20% opacity.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr. (3) to (6), r. (7), Register, June, 1975, No. 234, eff. 7-1-75; emerg. am. (4) (b) 3, eff. 12-3-75; am. (4) (a) 1. a. and (4) (b) 3. (intro.), r. and recr. (4) (b) 3. a., Register, April, 1976, No. 244, eff. 5-1-76; am. (4) (a), Register, November, 1976, No. 251, eff. 12-1-76; r. and recr. (1) to (4), Register, September, 1979, No. 285, eff. 10-1-79; cr. (2) (d) and (e), (3) (f), (g) and (h), (4) (g), (h) and (i), Register, February, 1981, No. 302, eff. 3-1-81; am. (2) (b) and (c), (3) (c) to (e), (4) (c), (d) and (f), r. (2) (d) and (e), (3) (f) to (h), (4) (e) and (g) to (i), cr. (7), Register, August, 1981, No. 308, eff. 9-1-81; r. (2) (b) 1., ren. (2) (b) 2., 3. and 4. to be (2) (b) 1. to 3., renum. (2) (c) to be (2) (d) and am., cr. (2) (c), Register, March, 1982, No. 315, eff. 4-1-82; am. (2) (d) (intro.), 3. and 5., cr. (2) (e), Register, October, 1982, No. 322, eff. 11-1-82.

NR 154.12 Control of sulfur emissions. (1) GENERAL LIMITATIONS. No person shall cause, suffer, allow, or permit emission of sulfur or sulfur compounds into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The limitation on sulfur content of stand-by fuel is specified in s. NR 154.16 and the limitation on total reduced sulfur from pulping operations is specified in s. NR 154.18 (2).

(2) SULFUR LIMITATIONS. No person shall cause, suffer, allow, or permit sulfur dioxide 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 liquid fossil fuel: 0.80 pounds of SO_2 per million BTU input.

2. Firing of solid fossil fuel: 1.2 pounds of SO_2 per million BTU input.

(b) New or modified sulfuric acid plants other than those utilized primarily as a means of preventing emission to the ambient air of sulfur dioxide or other sulfur compounds: 4.0 pounds of SO_2 per ton of acid produced.

(c) In the Southeast Wisconsin Intrastate AQCR installations of 250 million BTU per hour or less (heat input of an installation shall follow ASME standard number APS-1) in addition to meeting the emission limits of s. NR 154.11 (4), shall not burn coal with a sulfur content exceeding 1.11 pounds per million BTU in the coal.

(3) PETROLEUM REFINERIES. No person shall cause, suffer, allow or permit the release into the atmosphere or the burning of any fuel gas in an incinerator-waste heat boiler or process heater which contains greater than 0.10 grains of hydrogen sulfide (H_2S) per dry cubic foot at standard conditions (0.23 grams per dry cubic meter at standard condi-

tions) unless the gases resulting from combustion are treated in a manner which prevents the release of sulfur dioxide to the atmosphere as effectively as controlling the concentration of H_2S in the fuel gas being burned.

(4) BROKAW RACT SULFUR LIMITATIONS. (a) No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air within the corporate boundaries of the village of Brokaw, Marathon county from any direct stationary source on which construction or modification commenced prior to January 1, 1980 in amounts greater than:

1. For any liquid fossil fuel fired steam generating boiler:

a. With an emission point of less than 160 feet in height above ground, that occurring from firing fuel oil with a sulfur content equal to or less than .22% by weight.

b. With an emission point of 160 feet or more in height above ground, that occurring from firing fuel oil with a sulfur content equal to or less than 1.0% by weight.

2. For any Copeland recovery system: 113 pounds per hour.

3. For any pulp and papermill cooking acid plant: 22 pounds per hour.

4. For any pulp digester blow stack: 20 pounds per hour.

5. Notwithstanding the emission limitations of subds. 2, 3 and 4, for an pulp and papermill Copeland recovery system, cooking acid plant and pulp digester blow system which vent to a common stack with an emission point of 160 feet or more in height above ground: 228 pounds per hour.

(b) When a source is subject to the emission limitations of par. (a), the owner or operator shall not exceed the following increments of progress in achieving compliance, commencing with the nonattainment determination under s. NR 154.03 (1):

1. Submit plans for achieving compliance within 6 months.

2. Award any necessary contract within 8 months.

3. Where physical alteration of the source is necessary to achieve compliance, commence construction within 10 months and complete construction within 20 months.

4. Where only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel within 15 months.

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 sources to which par. (a) applies shall achieve final compliance and so certify to the department on or before December 31, 1982.

(5) MADISON RACT SULFUR LIMITATIONS. (a) No person shall cause, allow or permit sulfur dioxide to be emitted to the ambient air within the geographical boundaries of the city of Madison, Dane county, from

any direct source on which construction or modification was commenced prior to November 1, 1979 in amounts greater than:

1. Any fossil fuel fired steam generating boiler rated at more than 25 million BTU heat input per hour but less than 100 million BTU heat input per hour firing solid fossil fuel or solid fossil fuel in combination with solid, liquid or gaseous fuels: 7.0 pounds of sulfur dioxide per million BTU heat input.

2. Any fossil fuel fired steam generating boiler rated at equal to or greater than 100 million BTU heat input per hour firing solid fossil fuel or solid fossil fuel in combination with solid, liquid or gaseous fuels:

a. Any electrical utility boiler: 4.25 pounds of sulfur dioxide per million BTU heat input.

b. Any other boiler:

1) Height above ground of emission point of less than 180 feet: 2.5 pounds of sulfur dioxide per million BTU heat input.

2) Height above ground of emission point of 180 to 220 feet: X pounds of sulfur dioxide per million BTU heat input, where $X = 10 [0.0089 (\text{Emission Point Height}) - 1.18]$.

3) Height above ground of emission point of more than 220 feet: 5.8 pounds of sulfur dioxide per million BTU heat input.

3. Any fossil fuel fired steam generating boiler rated at more than 25 million BTU heat input per hour firing liquid fossil fuel or liquid fossil fuel in combination with liquid or gaseous fuels:

a. Distillate fuel oil: that occurring from firing a distillate fuel oil with a sulfur content equal to or less than 0.5% by weight.

b. Residual fuel oil: that occurring from firing a residual fuel oil with a sulfur content equal to or less than 1.1% sulfur by weight.

(b) When a source is subject to the emission limitations of par. (a), the owner or operator shall not exceed the following increments of progress in achieving compliance, commencing with the nonattainment determination under s. NR 154.03 (1):

1. Submit plans for achieving compliance within 6 months.

2. Award any necessary contracts within 9 months.

3. Where physical alteration of the source is necessary to achieve compliance, commence construction within 12 months and complete construction within 30 months.

4. Where only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel within 21 months.

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.

(6) MILWAUKEE RACT SULFUR LIMITATIONS. (a) No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air within the corporate boundaries of the city of Milwaukee, Milwaukee county, from any direct source on which construction or modification was commenced prior to December 1, 1983, averaged over any 24-hour period in amounts greater than specified in this paragraph.

1. Any electrical utility installation rated at more than 250 million BTU heat input per hour:

a. 3.28 pounds sulfur dioxide per million BTU heat input to any stack for solid fossil fuel, 1.60 pounds sulfur dioxide per million BTU heat input to any stack for residual fuel oil and 0.50 pounds sulfur dioxide per million BTU heat input to any stack for all other fuels, or

b. Q, when different fuels are burned in combination. Q is determined by the following equation:

$$Q = \frac{X(3.28) + Y(1.60) + Z(0.5)}{X + Y + Z}$$

where Q is the sulfur dioxide emission limit expressed in pounds sulfur dioxide per million BTU heat input to any stack, X is the percent of total heat input to any stack derived from solid fossil fuel, Y is the percent of total heat input to any stack derived from residual fuel oil, and Z is the percent of total heat input to any stack derived from all other fuels.

(b) When a source is subject to the emission limitations of par. (a), the owner or operator may not exceed the following increments of progress in achieving compliance, commencing on December 1, 1983:

1. Submit plans for achieving compliance within 6 months.

2. Award any necessary contracts within 9 months.

3. Where physical alteration of the source is necessary to achieve compliance, commence construction within 12 months and complete construction by November 9, 1985.

4. Where only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel by August 9, 1985.

5. Achieve final compliance with the applicable emission limitations and so certify to the department by November 9, 1985.

(7) GREEN BAY AND DE PERE RACT SULFUR LIMITATIONS. (a) No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air within the corporate boundaries of the cities of Green Bay and De Pere, Brown county, from any direct source on which construction or modification was commenced prior to February 1, 1984 in amounts greater than those specified in this paragraph and par. (b).

1. Any electric utility shall comply with the following emission limitations:

a. Any electric utility boiler with the emission point at a height above ground of not less than 377 feet: 5.58 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

b. Any electric utility boiler with the emission point at a height above ground of less than 377 feet: 0.5 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

2. Any ammonia based sulfite pulp and paper mill shall comply with the following emission limitations:

a. Any steam generating boiler capable of firing coal, spent sulfite liquor or other fuels: except as provided in subpar. b., 5.95 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

b. If a fluidized bed combustor is operated at 106 million BTU per hour heat input or higher and its exhaust gases are vented to the stack servicing the steam generating boilers described in subpar. a., then: 10.74 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

c. Any pulp digester blow stack: 6.03 pounds of sulfur dioxide per hour.

d. All brown stock washers: a total of 23.18 pounds of sulfur dioxide per hour, from all washers.

e. All paper dryers: a total of 94.13 pounds of sulfur dioxide per hour, from all dryers.

f. All other sources not described in subpars. a. to f.: a total of 15.71 pounds of sulfur dioxide per hour.

3. Any paper mill in Green Bay located between milepoints 3.3 and 4.0 on the Fox river shall comply with the following emission limitations:

a. Fossil fuel fired steam generating boilers with the emission point at a height above ground of not less than 355 feet: 4.55 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack.

b. Fossil fuel fired steam generating boilers with the emission point at a height above ground of less than 355 feet: 0.5 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack.

c. All paper dryers: a total of 26.51 pounds of sulfur dioxide per hour from all dryers.

4. Any paper mill in DePere located between milepoints 7.0 and 7.4 on the Fox river shall comply with the following emission limitations:

a. Any fossil fuel fired steam generating boiler rated at less than or equal to 100 million BTU per hour: 2.54 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

b. Any fossil fuel fired steam generating boiler rated at greater than 100 million BTU per hour with the emission point at a height above ground of not less than 211 feet: 3.20 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

c. Any fossil fuel fired steam generating boiler rated at greater than 100 million BTU per hour with the emission point at a height above ground of less than 211 feet: 0.5 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

5. Any neutral sulfite semichemical pulp and paper mill shall comply with the following emission limitations:

a. Steam generating boilers with the emission point at a height above ground of not less than 212 feet: 3.88 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack when the boilers are fired at or below 158 million BTU per hour; 3.15 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack when the boilers are fired at a rate greater than 158 million BTU per hour and less than 309 million BTU per hour; and 2.87 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack when the boilers are fired at a rate of 309 million BTU per hour or greater.

b. Steam generating boilers with the emission point at a height above ground of less than 212 feet: 0.5 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack.

6. Any calcium based sulfite pulp and paper mill and any calcium based lignin chemical processing facility shall comply with the following emission limitations:

a. Fossil fuel fired steam generating boilers: 2.10 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack when the boilers are fired above 360 million BTU per hour; and 2.31 pounds of sulfur dioxide per million BTU heat input from the boilers to any stack when the boilers are fired at or below 360 million BTU per hour.

b. All Jennsen acid towers: a total of 9.21 pounds of sulfur dioxide per hour from all towers.

c. All brown stock washers: a total of 37.86 pounds of sulfur dioxide per hour from all washers.

d. All spent sulfite liquor spray dryers: a total of 25.71 pounds of sulfur dioxide per hour from all dryers.

7. Any paper mill in Green Bay located between milepoints 0.4 and 0.7 on the East river shall comply with the following emission limitations:

a. Any fossil fuel fired steam generating boiler: 1.50 pounds of sulfur dioxide per million BTU heat input from the boiler to any stack.

b. All paper dryers: a total of 27.25 pounds of sulfur dioxide per hour from all dryers.

(b) In addition to the emission limitations specified in par. (a), the following sources within the corporate boundaries of the cities of Green Bay and DePere, Brown county, shall comply with the annual emission limitations in this paragraph during the period from January 1, 1984 to December 31, 1988.

1. Any electric utility: The total emissions of sulfur dioxide from all electric utility boilers may not exceed 55,995 tons of sulfur dioxide per calendar year.

2. Any ammonia based sulfite pulp and paper mill: The total emissons of sulfur dioxide from all steam generating boilers may not exceed 28,000 tons of sulfur dioxide per calendar year.

3. Any paper mill in Green Bay located between milepoints 3.3 and 4.0 on the Fox river: The total emissions of sulfur dioxide from all steam generating boilers may not exceed 28,000 tons of sulfur dioxide per calendar year.

4. Any paper mill in DePere located between milepoints 7.0 and 7.4 on the Fox river: The total emissions of sulfur dioxide from all steam generating boilers may not exceed 3,000 tons of sulfur dioxide per calendar year.

5. Any neutral sulfite semichemical pulp and paper mill: The total emissions of sulfur dioxide from all steam generating boilers may not exceed 4,300 tons of sulfur dioxide per calendar year.

6. Any calcium based sulfite pulp and paper mill: The total emissions of sulfur dioxide from all steam generating boilers may not exceed 3,780 tons of sulfur dioxide per calendar year.

7. Any paper mill in Green Bay located between milepoints 0.4 and 0.7 on the East river: The total emissions of sulfur dioxide from all steam generating boilers may not exceed 1,100 tons of sulfur dioxide per calendar year.

(c) When a source is subject to the emission limitations of par. (a), the owner or operator shall meet the following deadlines in achieving compliance with those emission limitations:

1. Submit plans for achieving compliance within 6 months after February 1, 1984.

2. Award any necessary contracts within 9 months after February 1, 1984.

3. Where physical alteration of the source is necessary to achieve compliance, commence construction within 12 months after February 1, 1984 and complete construction on or before November 9, 1985.

4. Where only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel on or before August 9, 1985.

5. Achieve final compliance with the applicable emission limitations in par. (a) and so certify to the department on or before November 9, 1985.

(d) For purposes of determining compliance with the emission limitations of pars. (a) and (b), the owner or operator of a source described in par. (a) or (b) shall outline the specific methods for demonstrating compliance with the emission limitations to the satisfaction of the department in the compliance plans submitted under par. (c)1. The compliance demonstrations shall include, but not be limited to, the following requirements:

1. Any facility which has solid fossil fuel fired or spent sulfite liquor fired steam generating boilers with a combined rated heat input capacity of greater than 500 million BTU per hour shall install, calibrate, maintain and operate a continuous emission monitor, utilizing equipment and procedures reviewed and approved by the department.

2. Any facility which has solid fossil fuel fired steam generating boilers with a combined rated heat input capacity of less than 500 million BTU per hour shall collect and analyze a daily, as-fired sample of fuel used, utilizing equipment and procedures reviewed and approved by the department.

3. Any facility which has liquid fossil fuel fired steam generating boilers shall collect and analyze a daily, as-fired sample of fuel used, utilizing equipment and procedures reviewed and approved by the department.

4. Emissions from all other sources shall be determined by annual stack emissions testing or by such other appropriate methods reviewed and approved by the department.

5. Quarterly reports in duplicate shall be submitted to the department's Lake Michigan District Headquarters, P.O. Box 10448, Green Bay, Wisconsin 54307-0448. The quarterly reports shall include, but not be limited to, excess emission reports for facilities with continuous emission monitors, amounts of fuel used, and fuel sampling and analysis reports for compliance under subds. 2 and 3.

6. Each facility shall maintain complete records of emissions data and calculations used to verify emissions data at their premises and shall make such records available for inspection upon request by authorized representatives of the department during regular business hours.

(e) For purposes of determining the applicability of the boiler sizes and source capacities outlined in pars. (a) and (d), the capacity of a source and the size of a boiler of a described source shall be determined as of May 31, 1983.

(8) PESHTIGO RACT SULFUR LIMITATIONS. (a) No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air within the corporate boundary of the city of Peshtigo, Marinette county, from any pulp, paper, or pulp and paper mill on which construction or modification was last commenced prior to October 1, 1984 in amounts greater than:

1. From any liquid fossil fuel and natural gas fired steam generating boiler,

a. 0.626 pounds per million BTU heat input if any liquid fossil fuel and natural gas fired steam generating boiler at the mill emits from a point 54 feet above ground, or

b. 2.301 pounds per million BTU heat input if all liquid fossil fuel and natural gas fired steam generating boilers at the mill emit from a point between 160 and 232 feet above ground, or

c. 2.930 pounds per million BTU heat input if all liquid fossil fuel and natural gas fired steam generating boilers at the mill emit from a point 232 feet or more above ground.

2. From any liquid fossil fuel, natural gas and wood refuse fired steam generating boiler,

a. 0.626 pounds per million BTU heat input if any liquid fossil fuel and natural gas fired steam generating boiler at the mill emits from a point 54 feet above ground, or

b. 0.522 pounds per million BTU heat input if all liquid fossil fuel and natural gas fired steam generating boilers at the mill emit from a point between 160 and 232 feet above ground, or

c. 2.930 pounds per million BTU heat input if all liquid fossil fuel and natural gas fired steam generating boilers at the mill emit from a point 232 feet or more above ground.

3. From any spent sulfite liquor incinerator and evaporation plant emitting from a point 197 feet or more above ground, 1,682.00 pounds per hour and 35,184.00 pounds in any 24 hours.

4. From all pulp digesters emitting from a point 100 feet or more above ground, 300.00 pounds in any 3 hours and 1,365.00 pounds in any 24 hours.

5. From any air contact evaporator emitting from a point 35 feet or more above ground, 33.02 pounds per hour and 686.88 pounds in any 24 hours.

6. From any acid plant emitting from a point 99 feet or more above ground, 0.543 pounds per hour.

7. From all other sources, a total of 6.82 pounds per hour.

(b) When a source is subject to par.(a), the owner or operator shall meet the following deadlines in achieving compliance with the emission limitations of that paragraph:

1. Achieve compliance with par. (a) 1., 2., 3., 5., 6., and 7. by October 1, 1984 and so certify to the department before November 1, 1984.

2. Submit plans for achieving compliance with the emission limitations of par. (a) 4. before April 1, 1985.

3. Award contracts for physical alterations necessary to achieve compliance with par. (a) 4. before May 1, 1985.

4. Commence construction necessary to achieve compliance with par. (a) 4. before August 1, 1985.

5. Complete construction necessary to achieve compliance with par. (a) 4. before November 1, 1986.

6. Achieve compliance with the emission limitations of par. (a) 4. and so certify to the department before November 20, 1986.

(c) The owner or operator of a source subject to par. (a) shall prepare and maintain a compliance demonstration plan to assure continuous compliance with the emission limitations of that paragraph.

1. The plan shall be in writing, updated as needed, and shall include but need not be limited to:

a. The name of the individual responsible for compliance demonstration activities at the source.

b. A description of the stacks, vents, raw materials, fuels and other items or parameters which will be tested, monitored, sampled, analyzed or measured to determine that the source is in compliance with par. (a).

c. A description of the testing methods, monitoring techniques, sampling and analysis methods and measurements which will be used, including the types of equipment to be used and the frequency of testing, monitoring, sampling, analysis or measurement.

d. A description of the records which will be created and maintained, their retention time, and the periodic reports which will be submitted to the department to demonstrate that the emission limitations of par. (a) are being met.

e. A procedure for detecting and reporting upsets, malfunctions and other events which may result in the violation of an emission limitation or which may affect the quantity or quality of complaince demonstration data.

f. Other relevant information reasonably needed to demonstrate continuous compliance with the emission limitations of par. (a).

2. The plan shall be filed with the department before November 1, 1984. Subsequent revisions to the plan shall be filed within 10 days of their completion.

3. The department may order any owner or operator of a source subject to par. (a) to submit the plan required by this paragraph for review and approval. The department may amend the plan if deemed necessary to assure that continuous compliance is adequately demonstrated and to recognize changes in the economic or technological feasibility of different compliance demonstration methods.

4. No owner or operator may fail to carry out the plan required under this paragraph or as amended by the department under subd. 3.

5. Nothing in this paragraph precludes the department from exercising its authority to require reporting or recordkeeping in addition to that required by this paragraph or exempts the owner or operator of a source subject to par. (a) from any other requirements relating to proof of compliance.

(d) No owner or operator of a source subject to par. (a) may cause, allow or permit sulfur dioxide to be emitted from emission points lower than those which existed at the source on December 1, 1983, unless written permission has been granted by the department.

(9) RHINELANDER RACT SULFUR LIMITATIONS. (a) No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air within the corporate boundary of the city of Rhinelander, Oneida county, from any direct stationary source on which construction or modification was last commenced prior to April 1, 1985 in amounts greater than those specified in this paragraph.

1. At any paper mill, pulp mill, or yeast plant or any combination of these sources:

a. From any fossil fuel fired steam generating stoker boiler, a maximum of 2.96 pounds per million BTU heat input and an annual average of 1.77 pounds per million BTU heat input.

b.From any fossil fuel fired steam generating cyclone boiler, a maximum of 6.44 pounds per million BTU heat input and an annual average of 4.51 pounds per million BTU heat input.

c. From any surface condenser, 0.40 pounds per hour and 7.92 pounds in any 24 hours.

d. From any yeast dryer, 4.20 pounds per hour and 88.1 pounds in any 24 hours.

e. From any liquor dryer, 2.10 pounds per hour and 44.9 pounds in any 24 hours.

2. At any yeast plant, pulp and paper mill; yeast plant and pulp mill; pulp and paper mill; pulp mill; or paper mill:

a. From any Jensen-Rock tower and tail gas scrubber with a common emission point, 18.5 pounds per hour.

b. From any blow pit vent and pad tank vent with a common emission point, 52.1 pounds per hour.

c. From all pulp digesters, a total of 875 pounds in any 3 hours and 2,650 pounds in any 24 hours.

d. From any sulfur dioxide steam stripper, 18.5 pounds per hour.

e. From any vacuum compression evaporator, 18.0 pounds per hour.

f. From any rotary screen dryer, 0.34 pounds per hour.

g. From any condensate tank, 4.58 pounds per hour.

h. From any bulk-blend tank, 14.7 pounds per hour.

i. From any direct contact cooler, 1.2 pounds per hour.

j. Notwithstanding subpar. a. through i., a total of 667.2 pounds in any 24 hours from any Jensen-Rock tower and tail gas scrubber with a common emission point and a total 3,964 pounds in any 3 hours and 8,800 pounds in any 24 hours from the sources subject to subpar. b. through i. if these sources also have a common emission point and if the common emission points are 163 feet or more above ground and 168 feet or more above ground, respectively.

k. From any other source not covered by subd. 1. or subpar. a. through j., 0.0 pounds per hour.

3. At any yeast plant or yeast plant and paper mill:

a. From any sulfur dioxide steam stripper, 21.3 pounds per hour and 444 pounds in any 24 hours.

b. From any vacuum compression evaporator, 28.8 pounds per hour and 600 pounds in any 24 hours.

c. From any condensate tank, 5.3 pounds per hour and 110 pounds in any 24 hours.

d. From any bulk-blend tank, 16.9 pounds per hour and 353 pounds in any 24 hours.

e. From any other source not covered by subd. 1. or subpar. a. through d., 0.0 pounds per hour.

(b) When a source is subject to par. (a), the owner or operator shall achieve compliance with par. (a) by April 1, 1985 and so certify to the department before June 1, 1985.

(c) The owner or operator of a source subject to par. (a) shall prepare and maintain a compliance demonstration plan to assure continuous compliance with the emission limitations of that paragraph.

1. The plan shall be in writing, updated as needed, and shall include but need not be limited to:

a. The name of the individual responsible for compliance demonstration activities at the source.

b. A description of the stacks, vents, raw materials, fuels and other items or parameters which will be tested, monitored, sampled, analyzed or measured to determine that the source is in compliance with par. (a).

c. A description of the testing methods, monitoring techniques, sampling and analysis methods and measurements which will be used, including the types of equipment to be used and the frequency of testing, monitoring, sampling, analysis or measurement.

d. A description of the records which will be created and maintained, their retention time, and the periodic reports which will be submitted to the department to demonstrate that the emission limitations of par. (a) are being met.

e. A procedure for detecting and reporting upsets, malfunctions and other events which may result in the violation of an emission limitation or which may affect the quantity or quality of compliance demonstration data.

f. Other relevant information reasonably needed to demonstrate continuous compliance with the emission limitations of par. (a).

2. The plan shall be filed with the department before May 1, 1985. Subsequent revisions to the plan shall be filed within 10 days of their completion.

3. The department may order any owner or operator of a source subject to par. (a) to submit the plan required by this paragraph for review and approval. The department may amend the plan if deemed necessary to assure that continuous compliance is adequately demonstrated and to recognize changes in the economic or technological feasibility of different compliance demonstration methods.

4. No owner or operator may fail to carry out the plan required under this paragraph or as amended by the department under subd. 3.

5. Nothing in this paragraph precludes the department from exercising its authority to require reporting or recordkeeping in addition to that required by this paragraph or exempts the owner or operator of a source subject to par. (a) from any other requirements relating to proof of compliance.

(d) No owner or operator of a source subject to par. (a) may cause, allow or permit sulfur dioxide to be emitted from emission points lower than those which existed at the source on December 1, 1983, unless written permission has been granted by the department.

(e) The owner or operator of a pulp mill subject to par. (a) 1. or 2. shall notify the department in writing 30 days prior to resumption or shut down of pulp manufacturing.

(10) ROTHSCHILD RACT SULFUR LIMITATIONS. (a) No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air within the corporate boundary of the village of Rothschild, Marathon county, from any direct source on which construction or modification was last commenced prior to April 1, 1985 in amounts greater than those specified in this paragraph.

1. At any pulp, paper, or pulp and paper mill:

a. From any fossil fuel fired boiler, 0.52 pounds per million BTU heat input.

b. From any fossil fuel fired boiler which can also burn wood, 0.025 pounds per million BTU heat input.

c. From all pulp digesters, a total of 4,050 pounds in any 3 hours and 16,200 pounds in any 24 hours.

d. From all acid towers not being loaded with stone, acid plant vent, and Kimberly Clark direct contact cooler with a common emission point, 16.0 pounds per hour.

e. From any acid tower being loaded with stone, 52.0 pounds in any day during which stone is loaded.

f. From all other sources, a total of 0.2 pounds per hour.

2. At any calcium-based spent sulfate liquor processing facility:

a. From any evaporator with an emission point 87 feet or more above ground, 16.2 pounds per hour.

b. From any evaporator with an emission point less than 87 feet above ground, 10.6 pounds per hour.

c.From all other sources, a total of 4.0 pounds per hour.

(b) When a source is subject to par. (a), the owner or operator shall meet the following deadlines in achieving compliance with the emission limitations of that paragraph:

1. Submit plans for achieving compliance to the department before June 1, 1985 for sources covered by par. (a) 1.a.,b.,c.,d. and f. and before July 1, 1985 for sources by par. (a)2.a. and b.

2. Order principal components and equipment needed to achieve compliance before July 1, 1985 for sources covered by par. (a)1.d. and f. and before September 1, 1985 for sources covered by par. (a)2.a. and b.

3. Where physical alteration of the source is necessary to achieve compliance, commence construction before September 1, 1985 for sources

covered by par. (a)1.d. and f. and before May 1, 1986 for sources covered by par. (a)2.a. and b.

4. Complete construction of necessary physical alterations of the source before January 1, 1986 for sources covered by par. (a)1.d. and f. and before July 1, 1986 for sources covered by par. (a)2.a. and b.

5. Where fuel modification or switching is necessary to achieve compliance, commence operation using new fuel before January 1, 1986 for sources covered by par. (a)1.a. and b.

6. Achieve final compliance with the emission limitations of par. (a) and so certify to the department before February 1, 1985 for sources covered by par. (a)1.e. and 2.c.; before July 1, 1985 for sources covered by par. (a)1.c.; before January 1, 1986 for sources covered by par. (a)1.a.,b.,d. and f.; and before September 1, 1986 for sources covered by par. (a)2.a. and b.

(c) The owner or operator of a source subject to par. (a) shall prepare and maintain a compliance demonstration plan to assure continuous compliance with the emission limitations of that paragraph.

1. The plan shall be in writing, updated as needed, and shall include but need not be limited to:

a. The name of the individual responsible for compliance demonstration activities at the source.

b. A description of the stacks, vents, raw materials, fuels and other items or parameters which will be tested, monitored, sampled, analyzed or measured to determine that the source is in compliance with par. (a).

c. A description of the testing methods, monitoring techniques, sampling and analysis methods and measurements which will be used, including the types of equipment to be used and the frequency of testing, monitoring, sampling, analysis or measurement.

d. A description of the records which will be created and maintained, their retention time, and the periodic reports which will be submitted to the department to demonstrate that the emission limitations of par. (a) are being met.

e. A procedure for detecting and reporting upsets, malfunctions and other events which may result in the violation of an emission limitation or which may affect the quantity or quality of compliance demonstration data.

f. Other relevant information reasonably needed to demonstrate continuous compliance with the emission limitations of par. (a).

2. The plan shall be filed with the department before May 1, 1985. Subsequent revisions to the plan shall be filed within 10 days of their completion.

3. The department may order any owner or operator of a source subject to par. (a) to submit the plan required by this paragraph for review and approval. The department may amend the plan if deemed necessary to assure that continuous compliance is adequately demonstrated and to

recognize changes in the economic or technological feasibility of different compliance demonstration methods.

4. No owner or operator may fail to carry out the plan required under this paragraph or as amended by the department under subd. 3.

5. Nothing in this paragraph precludes the department from exercising its authority to require reporting or recordkeeping in addition to that required by this paragraph or exempts the owner or operator of a source subject to par. (a) from any other requirements relating to proof of compliance.

(d) No owner or operator of a source subject to par. (a) may cause, allow or permit sulfur dioxide to be emitted from emission points lower than those which existed at the source on December 1, 1983, unless written permission has been granted by the department.

(11) STATEWIDE SULFUR DIOXIDE LIMITATIONS. (a) *Applicability.* This subsection applies to any direct source of sulfur dioxide, with the following exceptions:

1. Any direct source which is subject to emission limitations specified in sub. (2) or subs. (4) to (10); or

2. Any direct source which is subject to an emission limitation for sulfur dioxide, imposed by statute, rule, permit, order or plan approval, which is more restrictive than an emission limitation under par. (b) or (c).

(b) *Emission limits for existing sources.* Except as provided under par. (e) or (h), no person may cause, allow or permit sulfur dioxide to be emitted to the ambient air from any direct source constructed on or before February 1, 1985, in amounts greater than those specified in this paragraph.

1. All steam generating units and other fuel burning equipment firing solid fossil fuel, alone or in combination with fuel burning equipment firing other fuels, at a facility which has a total heat input capacity on solid fossil fuel of greater than or equal to 250 million BTU per hour may not emit more than 3.2 pounds of sulfur dioxide per million BTU heat input to any stack.

2. Any steam generating unit or other fuel burning equipment firing solid fossil fuel at a facility which has a total heat input capacity on solid fossil fuel of less than 250 million BTU per hour may not emit more than 5.5 pounds of sulfur dioxide per million BTU heat input from the fuel burning equipment to any stack.

3. Any steam generating unit or other fuel burning equipment firing residual fuel oil at a facility which has a total heat input capacity on residual fuel oil of greater than or equal to 250 million BTU per hour may not emit more than 1.5 pounds of sulfur dioxide per million BTU heat input from the fuel burning equipment to any stack.

4. Any steam generating unit or other fuel burning equipment firing residual fuel oil at a facility which has a total heat input capacity on residual fuel oil of less than 250 million BTU per hour may not emit more than 3.0 pounds of sulfur dioxide per million BTU heat input from the fuel burning equipment to any stack.

5. Any kraft mill producing pulp may not emit more than 10.0 pounds of sulfur dioxide per ton of air dried unbleached pulp from all process sources at the kraft mill. Process sources do not include equipment which is combusting fossil fuel.

6. Any sulfite mill producing pulp may not emit more than 20.0 pounds of sulfur dioxide per ton of air dried unbleached pulp from all process sources at the sulfite mill. Process sources do not include equipment which is combusting fossil fuel.

7. Any petroleum refinery shall comply with the following emisssion limitations:

a. The sulfur dioxide emissions from any process heater firing residual fuel oil may not exceed 0.8 pounds of sulfur dioxide per million BTU heat input from the process heater.

b. The sulfur dioxide emissions from any fuel burning equipment firing residual fuel oil may not exceed 0.8 pounds of sulfur dioxide per million BTU heat input to any stack.

c. The sulfur dioxide emissions from any Claus sulfur recovery plant may not exceed 6,743 pounds of sulfur dioxide in any 24-hour period or 843 pounds of sulfur dioxide in any 3-hour period.

d. The sulfur dioxide emissions from all other process units may not exceed 1,035 pounds of sulfur dioxide in any 1-hour period.

(c) *Emission limits for new sources.* No person may cause, allow or permit sulfur dioxide to be emitted to the ambient air from any direct source constructed after February 1, 1985 in amounts greater than those specified in this paragraph.

1. Any steam generating unit or other fuel burning equipment firing solid fossil fuel may not emit more than 3.2 pounds of sulfur dioxide per million BTU heat input from the fuel burning equipment to any stack.

2. Any steam generating unit or other fuel burning equipment firing residual fuel oil may not emit more than 1.5 pounds of sulfur dioxide per million BTU heat input from the fuel burning equipment to any stack.

3. Any kraft mill producing pulp may not emit more than 10.0 pounds of sulfur dioxide per ton of air dried unbleached pulp from all process sources at the kraft mill. Process sources do not include equipment which is combusting fossil fuel.

4. Any sulfite mill producing pulp may not emit more than 20.0 pounds of sulfur dioxide per ton of air dried unbleached pulp from all process sources at the sulfite mill. Process sources do not include equipment which is combusting fossil fuel.

5. Any petroleum refinery shall comply with the following emission limitations:

a. The sulfur dioxide emissions from any process heater firing residual fuel oil may not exceed 1.5 pounds of sulfur dioxide per million BTU heat input from the process heater.

b. The sulfur dioxide emissions from any fuel burning equipment firing residual fuel oil may not exceed 1.5 pounds of sulfur dioxide per million BTU heat input to any stack.

c. The sulfur dioxide emissions from any Claus sulfur recovery plant may not exceed:

1) 0.025% by volume of sulfur dioxide at zero percent oxygen on a dry basis, if emissions are controlled by an oxidation control system or a reduction control system followed by incineration; or

2) 0.030% by volume of reduced sulfur compounds and 0.0010% by volume of hydrogen sulfide calculated as sulfur dioxide at zero percent oxygen on a dry basis, if emissions are controlled by a reduction control system not followed by incineration.

(d) *More restrictive emission limits.* The department may require a source to meet a more restrictive emission limitation than an applicable emission limitation provided under par. (b) or (c) if the department determines that a more restrictive emission limitation is required to ensure that the source will not cause or exacerbate a violation of an ambient air quality standard or air increment for sulfur dioxide.

(e) *Alternate emission limits.* The department may grant an alternate emission limitation to a source which is subject to an emission limitation in par. (b) 1., 3., 5., 6., or 7. if the following conditions are met:

1. The owner or operator of the source submits a written request for an alternate emission limitation which outlines the specific conditions or special circumstances which prevent the source from complying with the applicable emission limitation in par. (b) and which contains a proposed alternate emission limitation for the source.

2. The owner or operator of the source demonstrates that the proposed alternate emission limitation will not delay attainment or prevent maintenance of an ambient air quality standard for sulfur dioxide, as demonstrated by air quality modeling acceptable to the department.

3. If the source is subject to the emission limitation in par. (b) 1. or 3., the proposed alternate emission limitation may not exceed 5.5 pounds of sulfur dioxide per million BTU heat input for any fuel burning equipment firing solid fossil fuel; or 3.0 pounds of sulfur dioxide per million BTU heat input for any fuel burning equipment firing residual fuel oil.

The alternate emission limitation of 5.5 pounds of sulfur dioxide per million BTU heat input for solid fossil fuel burning equipment may be calculated on a 30-day rolling average for a source, if there is one or more other sulfur dioxide emission limitations applicable to the source which would assure the attainment and maintenance of the ambient air quality standards for sulfur dioxide.

4. The owner or operator of the source demonstrates that there is a substantial cost difference between the costs required for the source's compliance with the applicable emission limitation in par. (b) and the costs required for the source's compliance with the proposed alternate emission limitation.

5. The owner or operator of the source demonstrates that the ambient air quality impact of the emissions from the source while emitting at the

proposed alternate emission limitation, when added to the background concentration of sulfur dioxide in the vicinity of the source, does not exceed 75% of the ambient air quality standards for sulfur dioxide. In calculating the 75% figure, sulfur dioxide emissions from sources which are regulated under ch. NR 440 shall not be considered. The condition in this subdivision may be waived by the department if a public hearing is held on the proposed alternate emission limitation and the public comments on the proposed alternate emission limitation indicate that there is no significant opposition to waiving this condition.

6. The proposed alternate emission limitation will not result in an increase in the annual emissions of sulfur dioxide from the source when comparing the source's projected annual emissions under the proposed alternate emission limitation with the source's actual annual emissions of sulfur dioxide, either in terms of the highest total tons of sulfur dioxide per calendar year or in terms of the highest annual average emission rate, as expressed in pounds of sulfur dioxide per million BTU, for calendar years 1979 to 1983. This condition does not apply to a source which is authorized by statute to increase its annual emissions of sulfur dioxide or to a major utility which is subject to s. 144.385, Stats.

7. The owner or operator of the source submits an application for and receives an elective operation permit or a modification to an operation permit for the source.

(f) *Compliance schedules.* 1. When a source is subject to the emission limitations of par. (b), the owner or operator shall meet the following deadlines in achieving compliance with those emission limitations:

a. Submit plans for achieving compliance on or before July 1, 1985;

b. Award any necessary contracts on or before October 1, 1985;

c. If physical alteration of the source is necessary to achieve compliance, commence construction on or before May 1, 1986 and complete construction on or before October 1, 1987;

d. If only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel on or before October 1, 1986;

e. Achieve final compliance with the applicable emission limitation in par. (b) and so certify to the department on or before December 31, 1987.

2. If the owner or operator of a source subject to the emission limitations of par. (b) requests an alternate emission limitation under par. (e), the owner or operator shall meet the following deadlines:

a. Submit request for alternate emission limitation under par. (e) on or before March 1, 1985;

b. Submit plans for achieving compliance with the applicable emission limitation on or before December 31, 1985;

c. Award any necessary contracts on or before February 1, 1986;

d. If physical alteration of the source is necessary to achieve compliance, commence construction on or before May 1, 1986 and complete construction on or before October 1, 1987;

e. If only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel on or before January 1, 1987;

f. Achieve final compliance with the applicable emission limitation and so certify to the department on or before December 31, 1987.

3. If the owner or operator of a source requests an alternate emission limitation under par. (e) and the department does not grant the request, the owner or operator of the source shall meet the following deadlines:

a. Submit plans for achieving compliance on or before September 1, 1985;

b. Award any necessary contracts on or before December 1, 1985;

c. If physical alteration of the source is necessary to achieve compliance, commence construction on or before May 1, 1986 and complete construction on or before October 1, 1987.

d. If only fuel modification or switching is necessary to achieve compliance, commence operation using new fuel on or before October 1, 1986;

e. Achieve final compliance with the applicable emission limitation in par. (b) and so certify to the department on or before December 31, 1987.

4. The department shall notify the owner or operator of a source which requests an alternate emission limit under par. (e) or submits a compliance plan under subd. 1.a., 2.b. or 3.a. whether the request is granted or the plan is approved not later than 55 business days after the department receives the request or submittal.

(g) *Compliance demonstrations.* 1. For purposes of determining compliance with the emission limitations of par. (b) or the alternate emission limitations of par. (e), the owner or operator of the source shall outline the specific methods for demonstrating compliance with the emission limitations, to the satisfaction of the department, in the compliance plans submitted under par. (e) 1.a., 2.b., or 3.a. The compliance demonstrations shall consist of one or more of the following:

a. Installation, calibration, maintenance and operation of a continuous emission monitor, utilizing equipment and procedures reviewed and approved by the department.

b. Collection and analysis of fuel used, utilizing equipment and procedures reviewed and approved by the department;

c. Stack emissions testing, utilizing equipment and procedures reviewed and approved by the department; and

d. Other appropriate methods reviewed and approved by the department.

2. An owner or operator of a source subject to the emission limitations of par. (b) or the alternate emission limitations of par. (e), shall maintain complete records of emissions data and calculations used to verify emissions data at the premises of the source and shall make such records available for inspection upon request by authorized representatives of the department during regular business hours.

(h) *Variance from emission limits.* 1. The department may grant a source-specific variance from an emission limitation provided in par. (b), an alternate emission limitation authorized under par. (e) or a compliance schedule in par. (f) if compliance with the emission limitations of pars. (b) and (e) or the compliance schedule of par. (f) are shown to be technologically or economically infeasible. A variance may be granted, by setting alternate emission limitations or alternate compliance schedules, or both, provided that:

a. The variance will not delay attainment or prevent maintenance of an ambient air quality standard for sulfur dioxide, as determined by methods acceptable to the department;

b. The owner or operator of the source for which a variance 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 complying with such requirements.

c. The owner or operator submits to the department on or before December 31, 1985 a request for a source-specific variance which demonstrates, to the department's satisfaction, that compliance with the applicable emission limitation or compliance schedule from which a variance is sought is technologically or economically infeasible.

2. A request for a source-specific variance under this paragraph shall be signed by the principal executive officer, sole proprietor, principal governmental executive or elected official or a duly authorized representative of the source and shall contain the following information:

a. The specific conditions or special circumstances which make compliance with the applicable emission limitation or compliance schedule by the source technologically or economically infeasible.

b. If a variance from an emission limitation is sought, the owner or operator shall submit proposed emission limitations.

c. If a variance from a compliance schedule is sought, the owner or operator shall submit a proposed compliance schedule which demonstrates reasonable further progress toward final compliance and contains a date for final compliance as soon as practicable.

d. Other relevant information as required by the department.

3. The department, in acting upon any request for a variance under this paragraph, shall:

a. Act on a request for a variance within 65 business days of the filing of a completed request;

b. Offer, through public notice, the opportunity for public comments including, if requested, a public hearing.

c. State in writing the reasons for denying, or granting, or for granting in modified form, any request for a variance.

4. The department may, after notice and opportunity for hearing, revoke or modify any variance if:

a. Any term or condition of the variance has been violated;

b. Changes in ambient air quality indicate that the source has a significant adverse impact on the attainment or maintenance of any ambient air quality standard for sulfur dioxide; or

c. The owner or operator did not act in good faith in demonstrating the technological or economic infeasibility of compliance with the applicable emission limitation or compliance schedule or in submitting other relevant information in support of the variance request.

(i) *Subsequent requests for alternate limits or variances.* If the owner or operator of a source subject to the emission limitations of par. (b) does not request an alternate emission under par. (e) on or before March 1, 1985, or source-specific variance under par. (h) on or before December 31, 1985, the source shall comply with the emission limitations of par. (b) and may not request an alternate emission limitation or a source-specific variance prior to January 1, 1988.

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; am. (4) (a), Register, December, 1982, No. 324, eff. 1-1-83; cr. (6), Register, November, 1983, No. 335, eff. 12-1-83; cr. (7), Register, January, 1984, No. 337, eff. 2-1-84; cr. (8), Register, September, 1984, No. 345, eff. 10-1-84; correction in (7) (d) 5. made under s. 13.93 (2m) (b) 6, Stats., correction in (8) (a) (intro.), (b) 1. and 2. and (c) 2., made under s. 13.93 (2m) (b) 14, Stats., Register, September, 1984, No. 345; cr. (11), Register, January, 1985, No. 349, eff. 2-1-85; cr. (9) and (10), Register, March, 1985, No. 351, eff. 4-1-85.

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 so as 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, 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^2 per meter (1.00 $in.^2$ 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 pertroleum 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 pertroleum 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 storage 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_2O) and vacuum from exceeding 1.5 kPa (6 inches of H_2O) in the gasoline tank truck;

b. A reading equal to or greater than 100% of the LEL at 2.5 centimenters 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 dispens-

ing 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_2O) and vacuum from exceeding 1.5 kPa (6 inches of H_2O) 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_2O) and vacuum from exceeding 1.5 kPa (6 inches of H_2O) 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_2O) in 5 minutes when pressurized to a gauge pressure of 4.5 kPa (18 inches of H_2O) or evacuated to a gauge pressure of 1.5 kPa (6 inches of H_2O) 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 sub. (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 151,412 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:

a. The operation of the source is not an integral part of the production process; and

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

c. 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 efficiency of the capture system shall be great enough to insure that the emission rate from the controlled line is less than or equal to an emission rate determined using the equation in sub. (13) (b) 1.c. 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.

3. Compliance extensions. a. Notwithstanding the emission limitations of subd. 2 and the provisions of sub. (12), the department may extend until December 31, 1985 the deadline for compliance with the emission limitations of subd. 2, provided that:

1) The can coating operation is a sheet basecoat (exterior or interior) or overvarnish operation and by itself or by the internal offset provisions of sub. (13) (b) meets an interim VOC emission limitation after December 31, 1982 of 0.48 kiligrams per liter of coating (4.0 pounds per gallon), excluding water, delivered to each coating applicator, or

2) The can coating operation is an end sealing compound operation and, by itself or by the internal offset provisions of sub. (13) (b), meets an interim VOC emission limitation after December 31, 1982 of 0.52 kilograms per liter of coating (4.3 pounds per gallon), excluding water delivered to each coating applicator, and

3) The owner or operator of the can coating facility submits a written request for a compliance extension under this subdivision and shows, to the department's satisfaction, that a compliance extension is necessary in order to comply with the emission limitations of subd. 2 through the use of low solvent content coating application technology.

b. If, during the term of an extension granted under this subdivision, the department determines that the can coating operation is not meeting its interim emission limitation, that advances in low solvent content coating application technology eliminate the need for the extension, or that the emission limitations of subd. 2 can be met without the use of energy intensive control devices, it may terminate the extension. Upon termination, the emission limitations of subd. 2 shall apply.

(d) *Coil coating.* 1. Applicability. Effective August 1, 1979, this paragraph applies, subject to the provisions of sub. (12), to the coating appli-

cators, 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 nonpriming 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 lacquer 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 31, 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 paragarph 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. Capture system. 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 deparment. 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 on products made for their use;

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. Change in technology. 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.

(6) SOLVENT CLEANING OPERATIONS. (a) *Solvent metal cleaning.* 1. Applicability. a. 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 that 25 parts per million of solvent by volume averaged over a complete adsorption cycle; or

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

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

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

f. Minimize carryout emissions by:

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

2) Racking parts for best drainage; and

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

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

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

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

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

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

a. Vent the entire dryer exhaust through:

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

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

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

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

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

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

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

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

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

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

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

c. The owner or operator of a petroleum liquid solvent dry cleaning facility shall repair all solvent vapor and liquid leaks within 3 working days of their discovery. If necessary repair parts are not on hand, the owner or operator shall order them within 3 working days following discovery of solvent vapor or liquid leaks and repair the leaks within 3 working days following receipt of the parts.

(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 noncondensible VOC, from the condensers or accumulators of the system. The control required by this subdivision shall be achieved by:

a. Piping the noncondensible 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; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

e. Commence process modifications within 21 months.

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

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

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

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

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

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

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

d. Commence process modifications within 15 months.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$E = \frac{A_1B_1C_1}{D_1} + \frac{A_2B_2C_2}{D_2} + \ldots + \frac{A_nB_nC_n}{D_n}$$

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), $A_{1,2\ldots n}$ = 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, $B_{1,2\ldots n}$ = the amount of coating material or ink in liters per hour (gallons per hour), excluding water, delivered to the applicator, $C_{1,2\ldots n}$ = volume fraction of solids in the coating or ink, excluding water, delivered to the applicator, and $D_{1,2\ldots n}$ = 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:

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

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

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

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

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

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

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

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

(bm) *Internal offsets for relocated lines.* Notwithstanding par. (b)1.b., any coating or printing line which is relocated to another facility may comply with the emission limitations in this section through an internal offset if:

1. The internal offset applies only to relocated coating or printing lines which had been jointly involved in an internal offset approved under par. (b)2.; and

2. The internal offset involving the relocated lines is approved by the department under the criteria of par. (b)1.a., c. and d.

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

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

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

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

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

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

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

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; r. and recr., Register, June, 1975, No. 234, eff. 7-1-75; am. Register, July, 1979, No. 283, eff. 8-1-79; am. (3)(c) 2. and 4., Register, August, 1979, No. 284, eff. 9-1-79; am., Register, March, 1981, No. 303, eff. 4-1-81; cr. (12) (b) and am. (12) (a) (intro.) and (g) 5., Register, July, 1981, No. 307, eff. 8-1-81; am. (13) (a) and cr. (13) (e), Register, December, 1982, No. 324, eff. 1-1-83; am. (4) (b) 3., (g) 4. f., (m) 1.f., (6) (b) 1. b. and (13) (b) 1. c., cr. (14) (c) 3., Register, July, 1983, No. 331, eff. 8-1-83; cr. (6) (c), am. (12) (a), (b), (d), (g) 3. and 4. and (h), Register, November, 1983, No. 335, eff. 12-1-83; reprinted to correct (6) (c) 1., (12) (a) 4. and (g) 4., Register, May, 1984, No. 341; cr. (13) (bm), Register, April, 1985, No. 352, eff. 5-1-85.

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

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

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

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

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

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

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

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

(2) NITROGEN OXIDES LIMITATIONS. No person shall cause, suffer, allow, or permit nitrogen oxides (expressed as NO_2) 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_2 per million BTU input.

2. Firing of liquid fossil fuel: 0.30 pounds of NO_2 per million BTU input.

3. Firing of solid fossil fuel: 0.70 pounds of NO_2 per million BTU input.

(b) New or modified weak nitric acid plants (acid 30 to 70% in strength:) 3.0 pounds of NO_2 per ton of acid produced.

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

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

(a) *Visible emissions.* 1. The limits in visible emission shall be the same as s. NR 154.11 (7) (c) of these rules.

(b) *Particulate emission limits.* 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.

(2) TAMPERING WITH AIR POLLUTION CONTROL EQUIPMENT. No person may dismantle, remove, or cause to be inoperative any air pollution control device or system which has been installed on a motor vehicle unless

the person replaces the device or system with an identical or comparable tested replacement device or system. Such devices or systems include but are not limited to:

(a) Positive crankcase ventilation system.

(b) Exhaust emission control devices.

(c) Evaporative fuel loss control systems.

(d) Any control device operating on principles such as thermal decomposition, catalytic oxidation or reduction, absorption, or adsorption.

(3) MOTOR VEHICLE EMISSION LIMITATIONS; EXEMPTIONS. (a) Any motor vehicle which is subject to inspection under s. 110.20 (6), Stats., may not emit carbon monoxide (CO) or hydrocarbons (HC) from the exhaust system in concentrations greater than those set forth in Table 1 when measured in an inspection conducted under ch. Trans 131.

Table 1

MODEL YEAR GROUPS			MAXIMUM EMISSION CONCENTRATION	
Light Duty Vehicles	Light Duty Trucks with gross vehicle weight of 6000 pounds or less	Light Duty Trucks with gross vehicle weight of 6001 to 8000 pounds	HC (parts per million of exhaust)	CO (as a percent of exhaust)
——	——	1968-1969	1450	9.0
1968-1971	1968-1971	1970-1972	800	8.0
1972-1974	1972-1974	1973-1978	700	7.0
1975-1977	1975-1978	——	600	6.0
1978-1979	1979-1984	1979-1984	400	4.0
1980	——	——	275	2.5
1981-1987	1985-1987	1985-1987	220	1.2

Note: Chapter Trans 131 is being proposed by the Department of Transportation.

(b) In addition to the vehicles specified in s. 144.42 (5), Stats., the following motor vehicles are exempt from the emission limitations of par. (a):

1. A motor carrier used "for hire" as defined in s. 194.01 (15), Stats.

2. A truck tractor as defined in s. 340.01 (73), Stats.

3. A motor home as defined in s. 340.01 (33m), Stats.

4. A motor vehicle registered under s. 341.26 (2) (b), (d), (dm), (e), (f), (g), (h), (i), (j), (k) or (m), (2r) or (4), Stats.

(4) VISIBLE EMISSION LIMITS FOR MOTOR VEHICLES, INTERNAL COMBUSTION ENGINES, AND MOBILE SOURCES. No person shall cause, suffer, allow, or permit visible emissions in amounts greater than the following limitations, except when uncombined water is the cause for violation.

(a) Gasoline-powered internal combustion engines of 25 HP or more, or gasoline-powered motor vehicles: no visible emissions for longer than 5 consecutive seconds.

(b) Diesel-powered motor vehicles of model year 1970 or later: emissions of shade or density greater than number 1 on the Ringelmann chart or 20% opacity for longer than 10 consecutive seconds.

(c) Diesel-powered motor vehicles of model year 1969 or earlier: emissions of shade or density greater than number 2 on the Ringelmann chart of 40% opacity for longer than 10 consecutive seconds.

(d) Ships, locomotives, or semistationary diesel engines: emissions of shade or density greater than number 2 on the Ringelmann chart or 40% opacity for longer than an aggregate time of 5 minutes in any 30-minute period. At no time shall emissions exceed a shade or density greater than number 4 on the Ringelmann chart or 80% opacity.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; am. (2) (intro.) and r. and recr. (3), Register, April, 1983, No. 328, eff. 5-1-83; reprinted to correct error in (2) (b) and (c), Register July, 1983, No. 331; am. (2) (intro.), Register, November, 1983, No. 335, eff. 12-1-83.

NR 154.18 Malodorous emissions. (1) GENERAL LIMITATIONS. No person shall cause, suffer, allow, or permit emission into the ambient air any substance or combination of substances in such quantities that an objectionable odor is determined to result unless preventive measures satisfactory to the department are taken to abate, or control such emission.

(a) An odor shall be deemed objectionable when either or both of the following tests are met:

1. Upon decision resulting from investigation by the department, based upon the nature, intensity, frequency, and duration of the odor as well as the type of area involved and other pertinent factors.

2. Or when 60% of a random sample of persons exposed to the odor in their place of residence or employment, other than employment at the odor source, claim it to be objectionable and the nature, intensity, frequency, and duration of the odor are considered.

(b) Abatement or control requirements may include but are not limited to:

1. Use of catalytic incinerators, after burners, scrubbers, adsorbers, absorbers, or other methods approved by the department.

2. The removal and disposal of odorous materials.

3. The use of methods in handling and storage of odorous materials that minimize emissions.

4. The following of prescribed standards in the maintenance of premises to reduce odorous emissions.

5. Use of best available control technology to reduce odorous emissions.

(2) TOTAL REDUCED SULFUR LIMITATIONS. No person shall cause, suffer, allow, or permit emission into the ambient air of total reduced sulfur

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(TRS) in excess of the following limitations: all emission standards in this section are based on average daily emissions.

(a) The emission of TRS from all recovery furnace stacks shall not exceed one-half pound of sulfur (as sulfur) per equivalent ton of air-dried kraft pulp, or from each recovery furnace stack 17 and one-half ppm, expressed as hydrogen sulfide on a dry gas basis, whichever is the more restrictive. New direct sources shall meet such other limit of TRS that proves to be reasonably attainable utilizing the latest in design of recovery furnace equipment, controls, and procedures. All direct sources shall be in compliance with this requirement by not later than July, 1976.

(b) Noncondensibles from digesters and multiple-effect evaporators shall be treated to reduce the emission of TRS equal to the reduction achieved by thermal oxidation in a lime kiln. All existing direct sources shall be in compliance with this requirement by not later than July, 1973.

(c) No extensions beyond these time limits for implementation may be granted without formal application to the department which determines adequate justification.

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

NR 154.19 Control of hazardous pollutants. (1) GENERAL LIMITATIONS. No person may cause, allow, or permit emissions into the ambient air of hazardous substances in such quantity, concentration, or duration as to be injurious to human health, plant or animal life unless the purpose of that emission is for the control of plant or animal life. Hazardous substances include but are not limited to the following materials, their mixtures, or compounds: asbestos, beryllium, cadmium, chromium, chlorine, fluorine, mercury, pesticides, or radioactive material.

(2) HAZARDOUS POLLUTANT LIMITATIONS. Limitations of emissions of hazardous pollutants shall follow general or special orders issued by the department.

(3) CONTROL OF MERCURY EMISSIONS. (a) No person shall cause, suffer, allow or permit emissions of mercury:

1. In such quantity and duration as to cause the ambient air concentration to exceed 1 ug/m^3, averaged over a 30-day period;

2. In quantities greater than 2,300 grams (5.07 pounds) per 24-hour period from mercury cell chlor-alkali plants, or mercury ore processing facilities.

3. In quantities greater than 3,200 grams of mercury per 24-hour period from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges.

(b) *Stack sampling.* 1. 'Mercury ore processing facility'. a. Unless a waiver of emission testing is requested and obtained from the department, each owner or operator of a facility processing mercury ore on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days after startup.

b. The department shall be notified at least 30 days prior to a stack or performance test to afford it the opportunity to have a representative

present to witness the testing procedures. The notice shall include a test plan in accordance with s. NR 154.06(5).

c. Samples shall be taken over such a period as is necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation may be made which would potentially increase emissions above that determined by the most recent source test until the new emission level has been estimated by calculation and the results reported to the department.

d. All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the source test. Each determination shall be reported to the department by registered letter dispatched before the close of the next business day following the determination.

e. Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by a department representative for a minimum of 2 years.

2. 'Mercury chlor-alkali plant-hydrogen and end box ventilation gas streams'. a. Unless a waiver of emission test is requested and obtained from the department, each owner or operator of a mercury chlor-alkali cell on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days after startup.

b. The department shall be notified at least 30 days in advance of stack or performance tests to afford it the opportunity to have a representative present to witness the testing procedures. The notice shall include a test plan in accordance with s. NR 154.06(5).

c. Samples shall be taken over such a period as is necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation may be made which would potentially increase emissions above that determined by the most recent source test until the new emission level has been estimated by calculation and the results reported to the department.

d. All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the source test. All determinations shall be reported to the department by registered letter dispatched before the close of the next business day following the determination.

e. Records of emissions test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by a department representative for a minimum of 2 years.

3. 'Mercury chlor-alkali plants — cell room ventilation system'. a. Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with subpar. b., or demonstrate compliance with subpar. d. and assume ventilation emissions of 1,300 grams per day of mercury.

b. Unless a waiver of emission test is requested and obtained from the department, each owner or operator of a new or modified chlor-alkali plant shall pass all cell room air in forced gas streams through stacks suitable for testing and shall test emissions from the cell room within 90 days after startup.

c. The department shall be notified at least 30 days in advance of stack or performance tests to afford it the opportunity to have a representative present to witness the testing procedures. The notice shall provide a test plan in accordance with s. NR 154.06(5).

d. An owner or operator may carry out design, maintenance and housekeeping practices approved by the department.

4. 'Sludge incineration and drying plants'. a. Unless a waiver of emission testing is requested and obtained from the department, each owner or operator of sludge incineration plants and drying plants on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days of startup. The tests shall be conducted in accordance with Method 101A or Method 105 in 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), using the procedures in subpar. f.

b. The department shall be notified at least 30 days in advance of stack or performance tests to afford it the opportunity to have a representative present to witness the testing procedures. The notice shall include a test plan in accordance with s. NR 154.06(5).

c. Samples shall be taken over such a period as is necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes may be made in the operation which would potentially increase emissions above the level determined by the most recent stack tests until the new emission level has been estimated by calculation and the results reported to the department.

d. All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the stack test. All determinations shall be reported to the department by registered letter dispatched before the close of the next business day following the determination.

e. Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection by a department representative for a minimum of 2 years.

f. If an owner or operator uses Method 105 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), the following procedures shall be adhered to, in addition to Method 105:

1) The sludge shall be sampled after dewatering and before incineration or drying, at a location that provides a representative sample of the sludge that is charged to the incinerator or dryer. Eight consecutive grab samples shall be obtained at intervals of between 45 and 60 minutes and thoroughly mixed into one sample. Each of the 8 grab samples shall have a volume of at least 200 milliliters but not more than 400 milliliters. A total of 3 composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period may not exceed 72 hours after the first grab sample is obtained. Samples may not be exposed to any condition that may result in mercury contamination or loss.

2) The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of plus or minus 5% over its operating range. Other methods

of measuring sludge mass charging rates may be used if they have received prior approval by the department.

3) The handling, preparation and analysis of sludge samples shall be accomplished according to Method 105.

4) The mercury emissions shall be determined by use of the following equation:

$$E_{Hg} = 1 \times 10^{-3} cQ$$

where:

E_{Hg} is the mercury emissions, grams/day

c is the mercury concentration of sludge on a dry solids basis, microgram/gram (parts per million)

Q is the sludge charging rate, kilogram/day

5) No changes in the operation of a plant may be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emissions level has been estimated by calculation and the results reported to the department.

6) All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the department by registered letter dispatched before the close of the next business day following the determination.

7) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available for inspection by a department representative for a minimum of 2 years.

(c) *Emission monitoring.* All wastewater treatment plant sludge incineration and drying plants for which mercury emissions exceed 1600 grams/day, demonstrated either by stack sampling or sludge sampling according to par. (b)4., shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), or the procedures specified in par. (b)4.f. The results of monitoring shall be reported to the department by registered letter dispatched before the close of the next business day following the monitoring. The results shall be retained at the source and shall be made available for inspection by a department representative for a minimum of 2 years.

(4) CONTROL OF ASBESTOS EMISSIONS. (a) *Asbestos mills.* There may be no visible asbestos emissions to the outside air from any asbestos mill except as provided in par. (f) .

(b) *Roadway areas.* The surfacing of roadway areas with asbestos tailings or with asbestos containing waste that is generated by any source subject to par. (c), (d), (e) or (h) is prohibited, except for temporary roadway areas on asbestos ore deposits. The deposition of asbestos tailings or asbestos-containing waste on roadway areas covered with snow or ice is considered "surfacing".

(c) *Manufacturing of asbestos products.* There may be no visible asbestos emissions to the outside air, except as provided in par. (f), from any of the operations listed in this paragraph if they use commercial asbestos or from any building or structure in which manufacturing of asbestos products is conducted.

1. The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap or other textile materials.

2. The manufacture of cement products.

3. The manufacture of fireproofing and insulating materials.

4. The manufacture of friction products.

5. The manufacture of paper, millboard and felt.

6. The manufacture of floor tile.

7. The manufacture of paints, coatings, caulks, adhesives and sealants.

8. The manufacture of plastics and rubber materials.

9. The manufacture of chlorine.

10. The manufacture of shotgun shells.

11. The manufacture of asphalt concrete.

(d) *Demolition and renovation.* Any owner or operator of a demolition or renovation operation who intends to demolish any institutional, commercial or industrial building (including apartment buildings having more than 4 dwelling units), structure, facility, installation, or portion thereof which contains any boiler, pipe, duct, tank, reactor, turbine, furnace or load-supporting structural member that is insulated or fireproofed with friable asbestos material, except as provided in subd. 1.; or who intends to renovate any institutional, commercial or industrial building, structure, facility, installation or portion thereof where more than 80 meters (ca. 260 feet) of pipe covered or coated with friable asbestos material are stripped or removed, or more than 15 square meters (ca. 160 square feet) of friable asbestos material used to cover or coat any duct, boiler, tank, reactor, turbine, furnace or structural member are stripped or removed shall comply with the requirements set forth under subds. 2. and 5.

1. The owner or operator of a demolition operation is exempted from the requirements of this paragraph provided:

a. The amount of friable asbestos material in the building or portion thereof to be demolished is less than 80 meters (ca. 260 feet) used to insulate pipes, and less than 15 square meters (ca. 160 square feet) used to insulate or fireproof any duct, boiler, tank, reactor, turbine, furnace or structural member; and

b. The notification requirements of subd. 2. are met. This written notification shall be postmarked or delivered to the department at least 20 days prior to commencement of demolition, shall include the information listed under subd. 2.a., b., d., and e., and shall state the measured or estimated amount of friable asbestos material which is present. Techniques of estimation shall be explained in the notification.

2. Notice of intention to demolish or renovate shall be provided to the department by the owner or operator of the demolition or renovation operation. The notice shall be postmarked or delivered to the department at least 10 days prior to commencement of such demolition, or as early as possible prior to commencement of emergency demolition, subject to subd. 6., and as early as possible prior to commencement of renovation. The notice shall include the following information:

a. Name of owner or operator.

b. Address of owner or operator.

c. Description of the building, structure, facility or installation to be demolished or renovated, including the size, age, and prior use of the structure, and the approximate amount of friable asbestos materials present.

d. Address or location of the building, stucture, facility or installation.

e. Scheduled starting and completion dates of demolition or renovation.

f. Nature of planned demolition or renovation and methods to be employed.

g. Procedures to be employed to meet the requirements of this paragraph and par. (j).

h. Name and address or location of the waste disposal site where the friable asbestos waste will be deposited.

i. Name, title, and authority of the state or local government representative who has ordered a demolition which is subject to subd. 6.

3. For purposes of determining whether a planned renovating operation constitutes a renovation within the meaning of this paragraph, the amount of friable asbestos material to be removed or stripped shall be:

a. For planned renovating operations involving individually nonscheduled operations, the total amount of friable asbestos material that can be predicted will be removed or stripped, at a source over the maximum period of time for which a prediction can be made. The period shall be not less than 30 days and not longer than one year.

b. For each planned renovating operation not covered by subpar. a., the total amount of friable asbestos material that can be predicted will be removed or stripped at a source.

4. For purposes of determining whether an emergency renovating operation constitutes a renovation within the meaning of this paragraph, the amount of friable asbestos material to be removed or stripped shall be the total amount of friable asbestos material that will be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

5. The procedures of this subdivision shall be used to prevent emissions of particulate asbestos material to outside air.

a. Friable asbestos materials used to insulate or fireproof any pipe, duct boiler, tank, reactor, turbine, furnace, or load-supporting structural

member shall be wetted and removed from any building, structure, facility or installation subject to this paragraph. Such removal shall occur before wrecking or dismantling of any portion of such building, structure, facility or installation that would break up the friable asbestos materials and before wrecking or dismantling of any other portion of such building, structure, facility or installation that would preclude access to such materials for subsequent removal. Removal of friable asbestos materials used on any pipe, duct or structural member which are encased in concrete or other similar structural material is not required prior to demolition, but such material shall be adequately wetted whenever exposed during demolition.

b. Friable asbestos materials used on pipes, ducts, boilers, tanks, reactors, turbine, furnaces, or structural members shall be adequately wetted during stripping, except as provided in subpars. d., f. and g.

c. Pipes, ducts, boilers, tanks, reactors, turbines, furnaces or structural members that are covered or coated with friable asbestos materials may be taken out of any building, structure, facility or installation subject to this paragraph as units or in sections, provided the friable asbestos materials exposed during cutting or disjointing are adequately wetted during the cutting or disjointing operation. The units may not be dropped or thrown to the ground but shall be carefully lowered to ground level.

d. The stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace or structural member that has been removed as a unit or in sections as provided in subpar. c. shall be performed in accordance with subpar. b. Rather than comply with the wetting requirement of subpar. b., a local exhaust ventilation and collection system may be used to prevent emissions to the outside air. The local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping of friable asbestos material. There may be no visible asbestos emissions to the outside air from such local exhaust ventilation and collection systems except as provided in par. (f).

e. All friable asbestos materials that have been removed or stripped shall be adequately wetted to ensure that the materials remain wet during all remaining stages of demolition or renovation and related handling operations. The materials may not be dropped or thrown to the ground or a lower floor. Such materials that have been removed or stripped more than 50 feet above ground level, except those materials removed as units or in sections, shall be transported to the ground via dust-tight chutes or containers.

f. Except as specified in this subparagraph, the wetting requirements of this paragraph are suspended when the temperature at the point of wetting is below 0°C (32°F). When friable asbestos materials are not wetted due to freezing temperatures, the materials on pipes, ducts, boilers, tanks, reactors, turbines, furnaces or structural members shall, to the maximum extent possible, be removed as units or in sections prior to wrecking. In no case may the requirements of subpar. d. or e. be suspended due to freezing temperatures.

g. For renovation operations, local exhaust ventilation and collection systems may be used, instead of wetting as specified in subpar. b., to prevent emissions of particulate asbestos material to outside air when

damage to equipment resulting from the wetting would be unavoidable. Upon request and supply of adequate information, the department shall determine whether damage to equipment resulting from wetting to comply with the provisions of this paragraph would be unavoidable. Local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping and removal of friable asbestos material. There may be no visible emissions to the outside air from the local exhaust ventilation and collection systems, except as provided in par. (f).

6. The demolition of a building, structure, facility or installation, pursuant to an order of an authorized representative of a state or local governmental agency, issued because that building is structurally unsound and in danger of imminent collapse is exempt from all but the following requirements of this paragraph.

a. The notification requirements specified by subd. 2.;

b. The requirements of stripping of friable asbestos materials from previously removed units or sections as specified in subd. 5.d.;

c. The wetting, as specified by subd. 5.e. of friable asbestos materials that have been removed or stripped;

d. The portion of the structure being demolished that contains friable asbestos materials shall be adequately wetted during the wrecking operation.

(e) *Spraying.* There may be no visible asbestos emissions to the outside air from the spray-on application of materials containing more than one percent asbestos, on a dry weight basis, used on equipment and machinery except as provided in par. (f). Materials sprayed on buildings, structures, pipes and conduits shall contain less than one percent asbestos on a dry weight basis.

1. Any owner or operator who intends to spray asbestos materials which contain more than one percent asbestos on a dry weight basis to insulate or fireproof equipment and machinery shall report this intention to the department at least 20 days prior to the commencement of the spraying operation. The report shall include the following information:

a. Name of owner or operator.

b. Address of owner or operator.

c. Location of spraying operation.

d. Procedures to be followed to meet the requirements of this paragraph.

2. The spray-on application of materials in which the asbestos fibers are encapsulated with a bituminous or resinous binder during spraying and which are not friable after drying is exempted from the requirements of this paragraph.

(f) *Alternatives.* Rather than meet the no-visible-asbestos-emission requirements of pars. (a), (c), (d), (e), (h), (j) and (k), an owner or operator may elect to use the methods specified in subds. 1. to 4. to clean emis-

sions containing particulate asbestos material before such emissions escape to, or are vented to, the outside air.

1. Fabric filter collection devices shall be used, except as noted in subds. 2. and 3. The devices shall be operated at a pressure drop of no more than 4 inches water gauge as measured across the filter fabric. The airflow permeability, as determined by ASTM method D737-75, incorporated by reference in sub. (7), may not exceed 30 ft 3/min/ft 2 for woven fabrics or 35 ft 3/min/ft 2 for felted fabrics, except that 40 ft 3/min/ft 2 for woven and 45 ft 3/min/ft 2 for felted fabrics is allowed for filtering air from asbestos ore dryers. Each square yard of felted fabric shall weigh at least 14 ounces and be at least one-sixteenth inch thick throughout. Synthetic fabrics may not contain fill yarn other than that which is spun.

2. If the use of fabric filters creates a fire or explosion hazard, the department may authorize the use of wet collectors designed to operate with a unit contacting energy of at least 40 inches water gauge pressure.

3. The department may authorize the use of filtering equipment other than that described in subds. 1. and 2. if the owner or operator demonstrates to the satisfaction of the department that the filtering of particulate asbestos material is equivalent to that of the described equipment.

4. All air-cleaning equipment authorized by this paragraph shall be properly installed, used, operated and maintained. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

(g) *Presence of uncombined water.* Where the presence of uncombined water is the sole reason for failure to meet the no-visible-asbestos-emission requirements of pars. (a), (c), (d), (e), (h), (j) and (k), the failure is not a violation of the emission requirements.

(h) *Fabricating.* There may be no visible asbestos emissions to the outside air, except as provided in par. (f), from any of the operations listed in this paragraph, if they use commercial asbestos, or from any building or structure in which the operations are conducted.

1. The fabrication of cement building products.

2. The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

3. The fabrication of cement or silicate board for ventilation hoods, ovens, electrical panels, laboratory furniture, bulkheads, partitions and ceilings for marine construction, and flow control devices for the molten metal industry.

(i) *Insulating.* Molded insulating materials which are friable and wet-applied insulating materials which are friable after drying, installed after February 1, 1984 may not contain commercial asbestos. The provisions of this paragraph do not apply to insulating materials which are spray applied.

Note: Such materials are regulated under par. (e).

(j) *Waste disposal for manufacturing of asbestos products, fabricating, demolition, renovation and spraying operations.* The owner or operator of

any source covered under the provisions of par. (c), (d), (e) or (h) shall meet the standards of this paragraph.

1. There may be no visible asbestos emissions to the outside air, except as provided in subd. 3., during the collection, processing including incineration, packaging, transporting, or deposition of any asbestos-containing waste material which is generated.

2. All asbestos-containing waste material shall be deposited at waste disposal sites which shall be operated in accordance with the following requirements:

a. There may be no visible asbestos emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, except as provided in subpar. e.

b. Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited, at intervals of 100 meters (ca. 330 ft.) or less except as specified in subpar. e. Signs shall be posted in such a manner and location that a person may easily read the legend. The warning signs shall conform to the requirements of 20″ × 14″ upright format signs specified in 29 C.F.R. s. 1910.145 (d) (4), incorporated by reference in sub. (7), and this paragraph. The signs shall display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

LEGEND

ASBESTOS WASTE DISPOSAL SITE

DO NOT CREATE DUST

Breathing Asbestos is Hazardous to Your Health

NOTATION
1″ Sans Serif, Gothic or Block
¾″ Sans Serif, Gothic or Block
14 Point Gothic

Spacing between lines shall be at least equal to the height of the upper of the 2 lines.

c. The perimeter of the disposal site shall be fenced in order to adequately deter access to the general public except as specified in subpar. d.

d. Warning signs and fencing are not required where the requirements of subpar. e.1) are met, or where a natural barrier adequately deters access to the general public. Upon request and supply of appropriate information, the department will determine whether a fence or a natural barrier adequately deters access to the general public.

e. Rather than meet the requirement of subpar. a., an owner or operator may elect to meet either of the requirements of subpar. e.1) or 2), or may use an alternative control method for emissions from active waste disposal sites which has received prior approval by the department.

1) At the end of each operating day or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day

or previous 24-hour period shall be covered with at least 15 centimeters (ca. 6 inches) of compacted non-asbestos-containing material.

2) At the end of each operating day, or at least once every 24-hour period while the disposal site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period shall be covered with a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion. The agent shall be used as recommended for the particular dust by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the department. For purposes of this subparagraph, waste crankcase oil is not considered a dust suppression agent.

3. Rather than meet the requirement of subd. 1, an owner or operator may elect to use either of the disposal methods specified under subpars. a. and b., or an alternative disposal method which has received prior approval by the department.

a. Treatment of asbestos-containing waste material with water.

1) Control device asbestos waste shall be thoroughly mixed with water into a slurry and other asbestos-containing waste material shall be adequately wetted. There may be no visible asbestos emissions to the outside air from the collection, mixing, and wetting operations, except as provided in par. (f).

2) After wetting, all asbestos-containing waste material shall be sealed into leak-tight containers while wet and such containers shall be deposited at waste disposal sites which are operated according to subd. 2.

3) The containers specified under subpar. a.2) shall be labeled with a warning label that states:

CAUTION

Contains Asbestos
Avoid Opening or
Breaking Container

Breathing Asbestos is Hazardous
to Your Health

Alternatively, warning labels specified by occupational safety and health standards of the department of labor, occupational safety and health administration (OSHA) under 29 C.F.R. s. 1910.93a(g)(2)(ii), incorporated by reference in sub. (7), may be used.

b. Processing of asbestos-containing waste material into non-friable forms:

1) All asbestos-containing waste material shall be formed into non-friable pellets or other shapes and deposited at waste disposal sites which are operated according to subd. 2.

2) There may be no visible asbestos emissions to the outside air from the collection and processing of asbestos-containing waste material except as specified in par. (f).

4. For the purposes of this paragraph, the term all asbestos-containing waste material as applied to demolition and renovation operations covered by par. (d) includes only friable asbestos waste and control device asbestos waste.

(k) *Waste disposal for asbestos mills.* The owner or operator of any source covered under par. (a) shall meet the following standard:

1. There may be no visible asbestos emissions to the outside air except as provided in subd. 3., during the collection, processing, packaging, transporting or deposition of any asbestos-containing waste material which is generated by any source covered under par. (a).

2. All asbestos-containing waste material shall be deposited at waste disposal sites which are operated according to par. (j)2.

3. Rather than meet the requirement of subd. 1., an owner or operator may elect to meet the requirements in subpars. a. and b., or use an alternative disposal method which has received prior approval by the department.

a. There may be no visible asbestos emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, except as provided in par. (f). The waste shall be subsequently processed either as specified in subpar. b. or as specified in par. (j)3.

b. All asbestos-containing waste material shall be adequately mixed, with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, prior to deposition at a waste disposal site. The agent shall be used as recommended for the particular dust by the manufacturer of the agent. There may be no discharge of visible asbestos emissions to the outside air from the wetting operation except as specified in par. (f). Wetting may be suspended when the ambient temperature at the waste disposal site is less than −9.5°C (ca. 15°F). The ambient air temperature shall be determined by a measurement method with an accuracy of plus or minus 1°C (ca. plus or minus 2°F) and recorded at least at hourly intervals during the period that the operation of the wetting system is suspended. Records of the temperature measurements shall be retained at the source for a minimum of 2 years and made available for inspection by a department representative.

(l) *Inactive asbestos waste disposal sites.* The owner of any inactive waste disposal site, which was operated by sources covered under par. (a), (c) or (h) and where asbestos-containing waste material produced by these sources was deposited, shall meet the standards of this paragraph.

1. There may be no visible asbestos emissions to the outside air from an inactive waste disposal site subject to this paragraph, except as provided in subd. 5.

2. Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited, at intervals of 100 meters (ca. 330 ft.) or less, except as specified in subd. 4. Signs shall be posted in such a manner and location that a person may easily read the legend. The warning signs required by this subdivision shall conform to the requirements of 20″ × 14″ upright format signs specified in 29 C.F.R. s. 1910.145 (d) (4), incorporated by reference in sub. (7), and this

paragraph. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to those specified in this subdivision.

LEGEND

ASBESTOS WASTE DISPOSAL SITE

DO NOT CREATE DUST

Breathing Asbestos is Hazardous
to Your Health

NOTATION

1" Sans Serif, Gothic or Block
3/4" Sans Serif, Gothic or Block

14 Point Gothic

Spacing between lines shall be at least equal to the height of the upper of the 2 lines.

3. The perimeter of the site shall be fenced in a manner adequate to deter access by the general public except as specified in subd. 4.

4. Warning signs and fencing are not required where the requirements of subd. 5.a. or b. are met, or where a natural barrier adequately deters access by the general public. Upon request and supply of appropriate information, the department will determine whether a fence or a natural barrier adequately deters access to the general public.

5. Rather than meet the requirement of subd. 1., an owner may elect to meet the requirements of this subdivision or may use an alternative control method for emissions from inactive waste disposal sites which has received prior approval by the department.

a. The asbestos-containing waste material shall be covered with at least 15 centimeters (ca. 6 inches) of compacted non-asbestos-containing material, and a cover of vegetation shall be grown and maintained on the area adequate to prevent exposure of the asbestos-containing waste material; or

b. The asbestos-containing waste material shall be covered with at least 60 centimeters (ca. 2 feet) of compacted non-asbestos-containing material and maintained to prevent exposure of asbestos containing waste; or

c. For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion shall be applied. The agent shall be used as recommended for the particular asbestos tailings by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the department. For purposes of this subparagraph, waste crankcase oil is not considered a dust suppression agent.

(5) CONTROL OF BERYLLIUM EMISSIONS. (a) Emissions to the atmosphere shall not exceed 10 grams of beryllium over a 24-hour period from:

1. Extraction plants, ceramic plants, foundries, incinerators and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys or beryllium-containing waste, and:

2. Machine shops which process beryllium, beryllium oxides or any alloy when such alloy contains more than 5% beryllium by weight.

(b) The burning of beryllium and/or beryllium-containing waste, except propellants, is prohibited except in incinerators, emissions from which must comply with par. (a).

(c) *Stack sampling.* 1. Unless a waiver of emission testing is obtained from the department, each owner or operator of a source covered under par. (a) on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days of startup.

2. The department shall be notified at least 30 days prior to an emission test to afford it the opportunity to have a representative present to witness the testing procedures.

3. Samples shall be taken over such a period as is necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities or other factors, the calculation of maximum 24-hour-period emissions will be based on that combination of factors which is likely to occur during the subject period and which result in the maximum emissions. No changes in the operation may be made which would potentially increase emissions above that determined by the most recent source test until a new emission level has been estimated by calculation and the results reported to the department.

4. All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the department by registered letter dispatched before the close of the next business day following the determinations.

5. Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for insection by a department representative for a minimum of 2 years.

(d) Emission to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentration of beryllium to exceed 75 microgram minutes per cubic meter of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an effect adverse to public health could occur.

(e) If combustion products from the firing of beryllium propellant are collected in a closed tank, emissions from such tank shall not exceed 2 grams per hour and a maximum of 10 grams per day.

(f) *Emission testing — rocket firing or propellant disposal.* 1. Ambient air concentrations shall be measured during and after firing of a rocket motor or propellant disposal and in such a manner that the effect of these emissions can be compared with the standard set in par. (d). The sampling techniques shall be approved by the department.

2. All samples shall be analyzed and results shall be calculated within 30 days after samples are taken and before any subsequent rocket motor

firing or propellant disposal at the same site. All results shall be reported to the department by registered letter dispatched before the close of the next business day following determination of the results.

3. Records of air sampling test results and other data needed to determine integrated intermittent concentrations shall be retained at the source and made available for inspection by a department representative for a minimum of 2 years.

4. The department shall be notified at least 30 days in advance of an air sampling test to have a representative present to witness the testing procedures.

(g) *Stack sampling — rocket motor firing.* 1. Sources subject to par. (e) shall be continuously sampled during the release of combustion products from the tank so that compliance with the standards can be determined. The tests shall be conducted in accordance with:

a. Method 104 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), or

b. Method 103 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7).

2. All samples shall be analyzed and beryllium emissions shall be determined within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the same site. All determinations shall be reported to the department by registered letter dispatched before the close of the next business day following the determination.

3. Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection by a department representative for a minimum of 2 years.

4. The department shall be notified at least 30 days prior to an emission test to afford it the opportunity to have a representative present to witness the testing procedures.

(6) CONTROL OF VINYL CHLORIDE EMISSIONS. (a) *Applicability.* This subsection applies to plants which produce:

1. Ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene,

2. Vinyl chloride by any process,

3. One or more polymers containing any fraction of polymerized vinyl chloride and

4. Any combination of the products listed in subds. 1. through 3.

(b) *Exemption.* This subsection does not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of no more than 0.19 cubic meters (50 gallons).

(c) *Partial exemption.* Paragraphs of this subsection other than pars. (f)1.a., 2., 3., and 4., (i), (j), (k), (l), and (m) do not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of greater than

0.19 cubic meters (50 gallons) and no more than 4.07 cubic meters (1100 gallons).

(d) *Emission standards for ethylene dichloride plants.* 1. 'Ethylene dichloride purification'. The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in ethylene dichloride purification may not exceed 10 parts per million, except as provided in par. (g) 1. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in par. (g) 2.f.1) before being opened.

2. 'Oxychlorination reactor'. Except as provided in par. (g) 1., emissions of vinyl chloride to the atmosphere from each oxychlorination reactor may not exceed 0.2 gram/kilogram (0.0002 pound/pound) of the 100% ethylene dichloride product from the oxychlorination process.

(e) *Emission standard for vinyl chloride plants.* An owner or operator of a vinyl chloride plant shall comply with the requirements of this paragraph and par. (g).

1. 'Vinyl chloride formation and purification'. The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in vinyl chloride formation or purification, or both, may not exceed 10 parts per million, except as provided in par. (g) 1. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in par. (g) 2.f.1) before being opened.

2. [Reserved]

(f) *Emission standards for polyvinyl chloride plants.* An owner or operator of a polyvinyl chloride plant shall comply with the requirements of this paragraph and par. (g).

1. 'Requirements for vinyl chloride reactors'. a. The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each vinyl chloride reactor may not exceed 10 parts per million, except as provided in pars. (f)1.b. and (g)1.

b. The vinyl chloride reactor opening loss from each vinyl chloride reactor may not exceed 0.02 gram vinyl chloride/kilogram (0.00002 pound vinyl chloride/pound) of polyvinyl chloride product, with the product determined on a dry solids basis. This requirement applies to any vessel which is used as a vinyl chloride reactor or as both a vinyl chloride reactor and a stripper. In the bulk process, the product means the gross product of prepolymerization and postpolymerization.

c. Except for an emergency manual vent valve discharge, there may be no discharge to the atmosphere from any manual vent valve on a polyvinyl chloride reactor in vinyl chloride service. An emergency manual vent valve discharge means a discharge to the atmosphere which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any discharge to the atmosphere from any manual vent valve, the owner or operator of the source from which the discharge occurs shall submit to the department a report in writing containing information on the source, nature and cause of the discharge, the method used for determining the vinyl chloride loss, the action that was taken to abate the discharge, and measures adopted to prevent future discharges.

2. 'Requirement for strippers.' The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each stripper may not exceed 10 parts per million, except as provided in par. (g)1. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in par. (g)2.f.1) before being opened.

3. 'Requirement for mixing, weighing, and holding containers.' The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each mixing, weighing, or holding container in vinyl chloride service which precedes the stripper, or the reactor if the plant has no stripper, in the plant process flow may not exceed 10 parts per million, except as provided in par. (g)1. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in par. (g)2.f.1) before being opened.

4. 'Requirement for monomer recovery systems.' The concentration of vinyl chloride in any exhaust gases discharged to the atmosphere from each monomer recovery system may not exceed 10 parts per million, except as provided in par. (g)1. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in par. (g)2.f.1) before being opened.

5. 'Requirements for sources following strippers.' The following requirements apply to emissions of vinyl chloride to the atmosphere from the combination of all sources following strippers, or vinyl chloride reactors if the plant has no strippers, in the plant process flow including but not limited to, centrifuges, concentrators, blend tanks, filters, dryers, conveyor air discharges, baggers, storage containers, and inprocess wastewater.

a. In polyvinyl chloride plants using stripping technology to control vinyl chloride emissions, the weighted average residual vinyl chloride concentration in all grades of polyvinyl chloride resin processed through the stripping operation on each calendar day, measured immediately after the stripping operation is completed, may not exceed:

1) 2000 parts per million for polyvinyl chloride dispersion resins, excluding latex resins;

2) 400 ppm for all other polyvinyl chloride resins, including latex resins, averaged separately for each type of resin; or

b. In polyvinyl chloride plants controlling vinyl chloride emissions with technology other than stripping or in addition to stripping, emissions of vinyl chloride to the atmosphere may not exceed:

1) 2 grams/kilogram (0.002 pound/pound) product from the strippers (or vinyl chloride reactors if the plant has no strippers) for dispersion polyvinyl chloride resins, excluding latex resins, with the product determined on a dry solids basis;

2) 0.4 gram/kilogram (0.0004 pound/pound) product from the strippers (or vinyl chloride reactors if the plant has no strippers) for all other polyvinyl chloride resins, including latex resins, with the product determined on a dry solids basis.

(g) *Emission standards for ethylene dichloride, vinyl chloride and polyvinyl chloride plants.* An owner or operator of an ethylene dichloride, vinyl

chloride, or polyvinyl chloride plant shall comply with the requirements of this paragraph.

1. 'Relief valve discharge'. Except for an emergency relief discharge, there may be no discharge to the atmosphere from any relief valve on any equipment in vinyl chloride service. An emergency relief discharge means a discharge which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any relief valve discharge, the owner or operator of the source from which the relief valve discharge occurs shall submit to the department a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss, the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

2. 'Fugitive emission sources'. a. Vinyl chloride emissions from loading and unloading lines in vinyl chloride service which are opened to the atmosphere after each loading and unloading operation shall be minimized as follows:

1) After each loading and unloading operation and before opening a loading or unloading line to the atmosphere, the quantity of vinyl chloride in all parts of each loading or unloading line that are to be opened to the atmosphere shall be reduced so that the parts combined contain no greater than 0.0038 cubic meter (0.13 cubic feet) of vinyl chloride, at standard temperature and pressure; and

2) Any vinyl chloride removed from a loading or unloading line in accordance with subpar. a.1) shall be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

b. During loading or unloading operations, the vinyl chloride emissions from each slip gauge in vinyl chloride service shall be minimized by ducting any vinyl chloride discharged from the slip gauge through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

c. 1) Rotating pumps. Vinyl chloride emissions from seals on all rotating pumps in vinyl chloride service shall be minimized by installing sealless pumps, pumps with double mechanical seals, or equivalent as provided in par. (h). If double mechanical seals are used, vinyl chloride emissions from the seals shall be minimized by maintaining the pressure between the 2 seals so that any leak that occurs is into the pump, by ducting any vinyl chloride between the 2 seals through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

2) Reciprocating pumps. Vinyl chloride emissions from seals on all reciprocating pumps in vinyl chloride service shall be minimized by installing double outboard seals, or equivalent as provided in par. (h). If double outboard seals are used, vinyl chloride emissions from the seals shall be minimized by maintaining the pressure between the 2 seals so that any leak that occurs is into the pump, by ducting any vinyl chloride between the 2 seals through a control system from which the concentration of

vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

3) Rotating compressors. Vinyl chloride emissions from seals on all rotating compressors in vinyl chloride service shall be minimized by installing compressors with double mechanical seals, or equivalent as provided in par. (h). If double mechanical seals are used, vinyl chloride emissions from the seals shall be minimized by maintaining the pressure between the 2 seals so that any leak that occurs is into the compressor, by ducting any vinyl chloride between the 2 seals through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

4) Reciprocating compressors. Vinyl chloride emissions from seals on all reciprocating compressors in vinyl chloride service shall be minimized by installing double outboard seals, or equivalent as provided in par. (h). If double outboard seals are used, vinyl chloride emissions from the seals shall be minimized by maintaining the pressure between the 2 seals so that any leak that occurs is into the compressor, by ducting any vinyl chloride between the 2 seals through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

5) Agitators. Vinyl chloride emissions from seals on all agitators in vinyl chloride service shall be minimized by installing agitators with double mechanical seals, or equivalent as provided in par. (h). If double mechanical seals are used, vinyl chloride emissions from the seals shall be minimized by maintaining the pressure between the 2 seals so that any leak that occurs is into the agitated vessels, by ducting any vinyl chloride between the 2 seals through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

d. Vinyl chloride emissions due to leakage from each relief valve on equipment in vinyl chloride service shall be minimized by installing a rupture disk between the equipment and the relief valve, by connecting the relief valve discharge to a process line or recovery system, or equivalent as provided in par. (h).

e. Except as provided in par. (f) 1.c., all gases which are manually vented from equipment in vinyl chloride service shall be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

f. Vinyl chloride emissions from opening of equipment (including loading or unloading lines that are not opened to the atmosphere after each loading or unloading operation) shall be minimized as follows:

1) Before opening any equipment for any reason, the quantity of vinyl chloride shall be reduced so that the equipment contains no more than 2% by volume vinyl chloride or 0.0950 cubic meter (25 gallons) of vinyl chloride, whichever is larger, at standard temperature and pressure, and

2) Any vinyl chloride removed from the equipment in accordance with subpar. f.1) shall be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

g. Unused portions of samples containing at least 10% by weight vinyl chloride shall be returned to the process, and sampling techniques shall be such that sample containers in vinyl chloride service are purged into a closed process system.

h. Vinyl chloride emissions due to leaks from equipment in vinyl chloride service shall be minimized by instituting and implementing a formal leak detection and elimination program. The owner or operator of a source on which construction or modification commenced after February 1, 1984 shall submit a description of the program to the department for approval. The program shall be submitted within 45 days after startup unless a waiver is granted by the department. If a waiver of compliance is granted, the program is to be submitted on a date scheduled by the department. Approval of a program shall be granted by the department provided it finds:

1) It includes a reliable and accurate vinyl chloride monitoring system for detection of major leaks and identification of the general area of the plant where a leak is located. A vinyl chloride monitoring system means a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry flame ion detection, or an equivalent or alternative method.

2) It includes a reliable and accurate portable hydrocarbon detector to be used routinely to find small leaks and to pinpoint the major leaks indicated by the vinyl chloride monitoring system. A portable hydrocarbon detector means a device which measures hydrocarbons with a sensitivity of at least 10 parts per million and is of such design and size that it can be used to measure emissions from localized points.

3) It provides for an acceptable calibration and maintenance schedule for the vinyl chloride monitoring system and portable hydrocarbon detector. For the vinyl chloride monitoring system, a daily span check shall be conducted with a concentration of vinyl chloride equal to the concentration defined as a leak according to subpar. h.6). The calibration shall be done with either:

a) A calibration gas mixture prepared from the gases specified in section 5.2.1 and 5.2.2 and in accordance with section 7.1 of Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), or

b) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard shall have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than plus or minus 5% from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in section 7.3 of Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7). The requirements in sections 5.2.3.1 and 5.2.3.2 of Test

Method 106 for certification of cylinder standards and for establishment and verification of calibration standards shall be followed.

4) The location and number of points to be monitored and the frequency of monitoring provided for in the program are acceptable when they are compared with the number of pieces of equipment in vinyl chloride service and the size and physical layout of the plant.

5) It contains an acceptable plan of action to be taken when a leak is detected.

6) It contains a definition of leak which is acceptable when compared with the background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system. Measurement of background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system shall be included with the description of the program. The definition of leak for a given plant may vary among the different areas within the plant and is also to change over time as background concentrations in the plant are reduced.

i. Vinyl chloride emissions to the atmosphere from inprocess wastewater shall be reduced as specified in this subparagraph.

1) The concentration of vinyl chloride in each inprocess wastewater stream containing greater than 10 parts per million vinyl chloride measured immediately as it leaves a piece of equipment and before being mixed with any other inprocess wastewater stream shall be reduced to no more than 10 parts per million by weight before being mixed with any other inprocess wastewater stream which contains less than 10 parts per million vinyl chloride, before being exposed to the atmosphere, before being discharged to a wastewater treatment process, or before being discharged untreated as a wastewater. This subparagraph does apply to water which is used to displace vinyl chloride from equipment before it is opened to the atmosphere in accordance with par. (f)1.b. or subpar. f., but does not apply to water which is used to wash out equipment after the equipment has already been opened to the atmosphere in accordance with par. (f)1.b. or subpar. f.

2) Any vinyl chloride removed from the inprocess wastewater in accordance with subpar. i.1) shall be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases may not exceed 10 parts per million, or equivalent as provided in par. (h).

3. 'Standard operating procedure'. The requirements in subpars. a., b., e., f., g., and h., shall be incorporated into a standard operating procedure and made available upon request for inspection by a department representative. The standard operating procedure shall include provisions for measuring the vinyl chloride in equipment 4.75 cubic meters (1,250 gallons) in volume for which an emission limit is prescribed in subpar. f.1) prior to opening the equipment and using Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), a portable hydrocarbon detector, or an equivalent or alternative method. The method of measurement shall meet the requirements in par. (i)7.e.1)a) or b).

(h) *Equivalent equipment and procedures.* Upon written application from an owner or operator, the department may approve use of equip-

ment or procedures which have been demonstrated to the department's satisfaction to be equivalent in terms of reducing vinyl chloride emissions to the atmosphere to those prescribed for compliance with a specific paragraph of this subsection. Any request for using an equivalent method shall be submitted to the department with the application for a permit to construct or modify and operate the vinyl chloride source.

(i) *Emission tests.* 1. Unless a waiver of emission testing is obtained from the department, each owner or operator of a source to which this subsection applies on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days of startup.

2. The department shall be notified at least 30 days prior to a stack or performance test to afford the department the opportunity to have a representative present to witness the testing procedures.

3. Any emission test shall be conducted while the equipment being tested is operating at the maximum production rate at which the equipment will be operated and under other relevant conditions as may be specified by the department based on the representative performance of the source.

4. [Reserved]

5. When at all possible, each sample shall be analyzed within 24 hours, but in no case in excess of 72 hours of sample collection. Vinyl chloride emissions shall be determined within 30 days after the emission test. The owner or operator shall report the determinations to the department by registered letter dispatched before the close of the next business day following the determination.

6. The owner or operator shall retain at the plant and make available, upon request, for inspection by a department representative, for a minimum of 2 years, records of emission test results and other data needed to determine emissions.

7. Unless otherwise specified, the owner or operator shall use Test Methods of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), for each test as required by subpars. a., b., c., d. and e. unless an equivalent method or an alternative method has been approved by the department. If the department finds reasonable grounds to dispute the results obtained by an equivalent or alternative method, the department may require the use of a reference method. If the results of the reference and equivalent or alternative methods do not agree, the results obtained by the reference method prevail, and the department may notify the owner or operator that approval of the method previously considered to be equivalent or alternative is withdrawn.

a. Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), shall be used to determine the vinyl chloride emissions from any source for which an emission limit is prescribed in par. (d) 1. or 2., (e) 1., (f) 1.a., 2., 3., or 4., or from any control system to which reactor emissions are required to be ducted in par. (f) 1.b. or to which fugitive emissions are required to be ducted in par. (g) 2.a.2), b., e., f .2), or i.2).

1) For each run, one sample shall be collected. The sampling site shall be at least 2 stack or duct diameters downstream and one-half diameter upstream from any flow disturbance such as a bend, expansion, contraction or visible flame. For a rectangular cross section an equivalent diameter shall be determined from the following equation:

$$\text{equivalent diameter} = 2\,(\text{length})(\text{width})/\text{length} + \text{width}$$

The sampling point in the duct shall be at the centroid of the cross section. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The sample shall be taken over a minimum of one hour, and shall contain a minimum volume of 50 liters corrected to standard conditions.

2) Each emission test shall consist of 3 runs. For the purpose of determining emissions, the average of results of all runs shall apply. The average shall be computed on a time weighted basis.

3) For gas streams containing more than 10% oxygen the concentration of vinyl chloride as determined by Test Method 106 shall be corrected to 10% oxygen (dry basis) for determination of emissions by using the following equation:

$$C_b(\text{corrected}) = C_b\ 10.9/20.9 - \text{percent } O_2$$

where:

C_b(corrected) is the concentration of vinyl chloride in the exhaust gases, corrected to 10% oxygen, C_b is the concentration of vinyl chloride as measured by Test Method 106

20.9 equals the percent oxygen in the ambient air at standard conditions

10.9 is the percent oxygen in the ambient air at standard conditions minus the 10% oxygen to which the correction is being made

percent O_2 is the percent oxygen in the exhaust gas as measured by Reference Method 3 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in sub. (7)

4) For those emission sources where the emission limit is prescribed in terms of mass rather than concentration, mass emissions in kilograms/100 kilograms product shall be determined by using the following equation:

$$C_{BX} = [C_b(2.60)\ Q\ 10^{-6}]\,[100]/Z$$

where:

C_{BX} equals the kilograms vinyl chloride/100 kilograms product

C_b is the concentration of vinyl chloride as measured by Test Method 106

2.60 equals the density of vinyl chloride at one atmosphere and 20°C in kilograms/cubic meter

Q is the volumetric flow rate in cubic meters/hour as determined by Reference Method 2 of 40 C.F.R. pt. 60, Appendix A, incorporated by reference in sub. (7)

10^{-6} is the conversion factor for parts per million

Z is the production rate (kilograms/hour)

b. Test Method 107 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), shall be used to determine the concentration of vinyl chloride in each inprocess wastewater stream for which an emission limit is prescribed in par. (g) 2. i. 1).

c. Where a stripping operation is used to attain the emission limit in par. (f)5., emissions shall be determined using Test Method 107 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), as follows:

1) The number of strippers and samples and the types and grades of resin to be sampled shall be determined by the department for each individual plant at the time of the test based on the plant's operation.

2) Each sample shall be taken immediately following the stripping operation.

3) The corresponding quantity of material processed by each stripper shall be determined on a dry solids basis and by a method submitted to and approved by the department.

4) At the prior request of the department, the owner or operator shall provide duplicates of the samples required in subpar. c.1).

d. Where control technology other than or in addition to a stripping operation is used to attain the emission limit in par. (f)5., emissions shall be determined as follows:

1) Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), shall be used to determine atmospheric emissions from all of the process equipment simultaneously. The requirements of subpar. a. shall be met.

2) Test Method 107 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), shall be used to determine the concentration of vinyl chloride in each inprocess wastewater stream subject to the emission limit prescribed in par. (f)5. The mass of vinyl chloride in kilograms/100 kilograms product in each inprocess wastewater stream shall be determined by using the following equation:

$$C_{BX} = [C_d R 10^{-6}] [100]/Z$$

where:

C_{BX} equals to kilogram vinyl chloride/100 Kg product

C_d is the concentration of vinyl chloride as measured by Test Method 107 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7)

R is the water flow rate in liters/hour determined in accordance with a method which has been submitted to and approved by the department

10 −6 is the conversion factor for parts per million

Z is the production rate (kilograms/hour), determined in accordance with a method which has been submitted and approved by the department

e. The vinyl chloride reactor opening loss for which an emission limit is prescribed in par. (f)1.b. shall be determined. The number of reactors for which the determination shall be made shall be specified by the department for each individual plant at the time of the determination based on the plant's operation. For a vinyl chloride reactor that is also used as a stripper, the detemination may be made immediately following the stripping operation.

1) Except as provided in subpar. e.2), the vinyl chloride reactor opening loss shall be determined using the following equation:

$$C = W(2.60)(10-6)(C_b)\ YZ$$

where:

C equals the kilogram vinyl chloride emissions/kilogram product

W is the capacity of the vinyl chloride reactor in cubic meters

2.60 is the density of vinyl chloride at one atmosphere and 20°C in kilogram/cubic meters

10−6 is the conversion factor for parts per million

C_b equals parts per million by volume vinyl chloride as determined by Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), or by a portable hydrocarbon detector which measures hydrocarbons with a sensitivity of at least 10 parts per million

Y is the number of batches since the vinyl chloride reactor was last opened to the atmosphere

Z is the average kilogram of polyvinyl chloride produced per batch in the number of batches since the vinyl chloride reactor was last opened to the atmosphere

a) If Method 106 is used to determine the concentration of vinyl chloride (C_b), the sample shall be withdrawn at a constant rate with a probe of sufficient length to reach the vessel bottom from the manhole. Samples shall be taken for 5 minutes within 6 inches of the vessel bottom, 5 minutes near the vessel center, and 5 minutes near the vessel top.

b) If a portable hydrocarbon detector is used to determine the concentration of vinyl chloride (C_b), a probe of sufficient length to reach the vessel bottom from the manhole shall be used to make the measurements. One measurement shall be made within 6 inches of the vessel bottom, one near the vessel center and one near the vessel top. Measurements shall be made at each location until the reading is stabilized. All hydrocarbons measured shall be assumed to be vinyl chloride.

c) The production rate of polyvinyl chloride (Z) shall be determined by a method submitted to and approved by the department.

2) A calculation based on the number of evacuations, the vacuum involved, and the volume of gas in the reactor is hereby approved by the department as an alternative method for determining reactor opening loss for past polymerization reactors in the manufacture of bulk resins.

(j) *Emission monitoring.* 1. A vinyl chloride monitoring system shall be used to monitor on a continuous basis the emissions from the sources for which emission limits are prescribed in pars. (d) 1. and 2., (e) 1., and (f) 1.a., 2., 3., and 4., and for any control system to which vinyl chloride reactor emissions are required to be ducted in par. (f) 1.b. or to which fugitive emissions are required to be ducted in par. (g) 2.a.2), b., e., f. 2) and i. 2).

2. The vinyl chloride monitoring system used to meet the requirement in subd. 1. shall be a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an equivalent or alternative method. The vinyl chloride monitoring system used to meet the requirements in par. (g) 2.h.2) may be used to meet the requirements of this paragraph.

3. A daily span check shall be conducted for each vinyl chloride monitoring system used. For all of the emission sources listed in subd. 1., except the one for which an emission limit is prescribed in par. (d) 2., the daily span check shall be conducted with a concentration of vinyl chloride equal to 10 parts per million. For the emissions source for which an emission limit is prescribed in par. (d) 2., the daily span check shall be conducted with a concentration of vinyl chloride which is determined to be equivalent to the emission limit for that source based on the emission test required by par. (i). The calibration shall be done with:

a. A calibration gas mixture prepared from the gases specified in sections 5.2.1 and 5.2.2 and in accordance with section 7.1 of Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), or

b. A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard shall have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than plus or minus 5% from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in section 7.3 of Test Method 106 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7). The requirements in sections 5.2.3.1 and 5.2.3.2 of Test Method 106 for certification of cylinder standards and for establishment and verification of calibration standards shall be followed.

(k) *Initial report.* 1. The owner or operator of any source to which this subsection applies and on which construction or modification is commenced after February 1, 1984 shall notify the department in writing

that the equipment and procedural specifications in par. (g) 2.a. through h. are being implemented.

2. The statement shall be submitted to the department within 90 days of the initial startup date. The statement shall contain the information specified in this subdivision.

a. A list of the equipment installed for compliance,

b. A description of the physical and functional characteristics of each piece of equipment,

c. A description of the methods which have been incorporated into the standard operating procedures for measuring or calculating the emissions for which emission limits are prescribed in par. (g) 2.a.1) and f.1), and

d. A statement that each piece of equipment is installed and that each piece of equipment and each procedure is being used.

(l) *Semiannual report.* 1. The owner or operator of any source subject to this subsection shall submit to the department on September 15 and March 15 of each year a report in writing containing the information required by this paragraph.

2. The first semiannual report shall be submitted within 180 days of the initial startup date of a source on which construction or modification commenced after February 1, 1984.

3. Unless otherwise specified, the owner or operator shall use the Test Methods of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), to conduct emission tests as required by subpars. b. and c., unless an equivalent or an alternative method has been approved by the department. If the department finds reasonable grounds to dispute the results obtained by an equivalent or alternative method, the department may require the use of a reference method. If the results of the reference and equivalent or alternative methods do not agree, the results obtained by the reference method prevail, and the department may notify the owner or operator that approval of the method previously considered to be equivalent or alternative is withdrawn.

a. The owner or operator shall include in the report a record of any emissions which averaged over any hour period (commencing on the hour) are in excess of the emission limits prescribed in par. (d) 1. or 2., (e) 1., or (f) 1.a., 2., 3., or 4., or for any control system to which reactor emissions are required to be ducted in par. (g) 2.a.2), b., e., f.2), or i.2). The emissions shall be measured in accordance with par. (j).

b. In polyvinyl chloride plants for which a stripping operation is used to attain the emission level prescribed in par. (f) 5., the owner or operator shall include in the report a record of the vinyl chloride content in the polyvinyl chloride resin. Test Method 107 of 40 C.F.R. pt. 61, Appendix B, incorporated by reference in sub. (7), shall be used to determine vinyl chloride content in accordance with this subparagraph.

1) If batch stripping is used, one representative sample of polyvinyl chloride resin shall be taken from each batch of each grade of resin immediately following the completion of the stripping operation and identified by resin type and grade and the date and time the batch is completed.

The corresponding quantity of material processed in each stripper batch shall be be recorded and identified by resin type and grade and the date and time the batch is completed.

2) If continuous stripping is used, one representative sample of polyvinyl chloride resin shall be taken for each grade of resin processed, whichever is more frequent. The sample shall be taken as the resin flows out of the stripper and identified by resin type and grade and the date and time the sample was taken. The corresponding quantity of material processed by each stripper over the time period represented by the sample during the 8-hour period shall be recorded and identified by resin type and grade and the date and time it represents.

3) The quantity of material processed by the stripper shall be determined on a dry solids basis and by a method submitted to and approved by the department.

4) At the prior request of the department, the owner or operator shall provide duplicates of the samples required in subpar. b. 1) and 2).

5) The report to the department by the owner or operator shall include the vinyl chloride content found in each sample required by subpar. b. 1) and 2), averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grade of resin processed by the stripper or strippers that calendar day, according to the following equation:

$$A_{T_i} = \frac{\sum_{i}^{n} = 1 \; P_{G_i} M_{G_i}}{Q_{T_i}} = \frac{P_{G_i} M_{G_i} + P_{G_2} M_{G_2} + \ldots P_{G_n} M_{G_N}}{Q_{T_i}}$$

where:

A is the 24-hour average concentration of type T_i resin in ppm (dry weight basis)

Q is the total production of type T_i resin over the 24-hour period in kilograms

T_i is the type of resin

$i = 1, 2 \ldots m$ where m is total number of resin types produced during the 24-hour period

M is the concentration of vinyl chloride in one sample of grade G_i resin in parts per million

P is the production of grade G_i resin represented by the sample in kilograms

G_i is the grade of resin (e.g., G_1, G_2 and G_3)

n is the total number of grades of resin produced during the 24-hour period

6) Records of all data needed to furnish the information required by subpar. b.5) shall be retained at the source and made available for in-

spection by a department representative for a minimum of 2 years. The records shall contain:

a) The vinyl chloride content found in all the samples required in subpar. b.1) and 2), identified by the resin type and grade and the time and date of the sample, and

b) The corresponding quantity of polyvinyl chloride resin processed by the stripper or strippers identified by the resin type and grade and the time and date it represents.

c. The owner or operator shall include in the report a record of the emissions from each reactor opening for which an emission limit is prescribed in par. (f)1.b. Emissions shall be determined in accordance with par. (i)7.e., except that emissions for each reactor are to be determined. For a reactor that is also used as a stripper, the determination may be made immediately following the stripping operation.

(m) *Recordkeeping.* The owner or operator of any source subject to this subsection shall retain the information specified in this paragraph at the source and make it available for inspection by a department representative for a minimum of 2 years.

1. A record of the leaks detected by the vinyl chloride monitoring system, as required by par. (g) 2.h., including the concentrations of vinyl chloride measured, analyzed, and recorded by the vinyl chloride detector, the location of each measurement and the date and approximate time of each measurement.

2. A record of the leaks detected during routine monitoring with the portable hydrocarbon detector and the action taken to repair the leaks, as required by par. (g)2.h.

3. A record of emissions measured in accordance with par. (j).

4. A daily operating record for each polyvinyl chloride reactor, including pressure and temperatures.

(7) INCORPORATION BY REFERENCE. (a) *Code of federal regulations.* The federal regulations or appendix materials in effect on June 30, 1983 listed in this paragraph are incorporated by reference in the corresponding subsections of this section. Copies of these materials 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 purchased for personal use from the superintendent of documents, U.S. government printing office, Washington D.C. 20402.

1. Appendix B of 40 C.F.R. pt. 61 for subs. (3), (4), (5) and (6).

2. Test Method 3, Appendix A of 40 C.F.R. pt. 60 for sub. (6) (i) 7.a.3).

3. Test Method 5, Appendix A of 40 C.F.R. pt. 60 for Test Method 101, Appendix B, 40 C.F.R. pt. 61.

4. 29 C.F.R. s. 1910.145 (d) (4) for sub. (4) (j) 2.b. and (l) 2.

5. 29 C.F.R. s. 1910.93a (g) (2) (ii) for sub. (4) (j) 3.a.3).

(b) *Other materials.* The materials listed in this paragraph are incorporated by reference in the corresponding subsections noted. Some of the

materials are also incorporated in Appendix B of 40 C.F.R. pt. 61 as in effect on June 30, 1983. Since Appendix B is incorporated by reference in this subsection by par. (a), materials incorporated by reference in that Appendix are hereby also incorporated by reference and made a part of this subsection. The materials 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 purchased for personal use at the corresponding address noted.

1. The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103, or the University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

a. ASTM D737-75, Standard Test Method for Air Permeability of Textile Fabrics, for sub. (4) (f) 1.

b. ASTM D1193-74, Standard Specifications for Type I Reagent Water, for 40 C.F.R. pt. 61, Appendix B, Method 101, par. 6.1.1.

c. ASTM D2986-71 (Reapproved 1978), Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, for 40 C.F.R. pt. 60, Appendix A, Method 5, par. 3.1.1.

2. [Reserved]

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; cr. (3), Register, December, 1972, No. 204, eff. 1-1-73; cr. (4) and (5), Register, June, 1975, No. 234, eff. 7-1-75; am. (1), Register, April, 1983, No. 328, eff. 5-1-83; renum. (3) (intro.), (a) and (b) to be (a), 1. and 2., (5)(c) and (d) to be (5)(d) and (e), cr. (3)(a)3., (b) and (c), (5)(c) (f) and (g), (6) and (7), r. and recr. (4), Register, January 4, 1984, No. 337, eff. 2-1-84.

NR 154.20 Emergency episode levels and emergency emission control action programs.

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; renum. (1) and (2) to be (2) and (3) and am., cr. (1), Register, June, 1975, No. 234, eff. 7-1-75; r. (1) and (3) (e), renum. to NR 493.02 and 493.03, Register, July, 1985, No. 355, eff. 8-1-85.

NR 154.21 Limitations on county, regional, or local regulations. Nothing in these rules shall be construed to limit the provisions of any county, regional, or local ordinance, regulation, or resolution which is more stringent or restrictive.

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

NR 154.22 Severability. Should any section, paragraph, phrase, sentence, or clause of this chapter be declared invalid or unconstitutional, the remainder of this chapter shall not be affected thereby.

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

NR 154.24 Procedures for noncontested case public hearings. (1) FORM AND SERVICE OF REQUEST. (a) Any person, state or agency authorized to request a public hearing under s. 144.392 (7) (a), 144.3925 (5) (a) or 144.397 (4) (a), Stats., shall submit such request in a form which complies with the applicable statutory requirements. The following format is a suggested format for requesting a public hearing:

TO The Department of Natural Resources:

REQUEST FOR NONCONTESTED CASE PUBLIC HEARING

The undersigned hereby requests a noncontested case public hearing on the (air pollution control permit application submitted by _____ to the department on _____, 19__) (operation permit issued by the department to _____ on _____, 19__) under section 144.392 (7) (a), 144.3925 (5) (a) or 144.397 (4) (a), Stats., as appropriate.

The requestors' interest in filing the request is _____

_____

The reasons why a public hearing is warranted are _____

_____

Date of Request _____

Signature _____

Name and Address _____

(b) A request for a public hearing under this subsection shall be submitted to the department within 30 days after the publication of the class 1 notice under ch. 985, Stats., announcing the opportunity to request a public hearing on the permit or permit application. Requests for hearings shall be mailed or personally delivered to the department to the person and the address specified in the notice.

(2) NOTICE OF HEARING. (a) If the department receives a request for a hearing under sub. (1) and the department determines that there is a significant public interest in holding a hearing, the department may hold a public hearing and, if a hearing is held, shall close the record of the public hearing within 70 days after the deadline for requesting a hearing.

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Not less than 10 days prior to the public hearing, the department shall publish a class 1 notice under ch. 985, Stats., announcing the hearing and shall serve a written notice of the hearing on the requestor, the permit applicant or permit holder and persons listed under s. 144.392 (5) (a) 2. to 5., Stats. The department may serve the notice of hearing by personal delivery or by mailing a copy of the notice to the last known post office address of the person to be served in a sealed envelope with first class postage prepaid.

(b) The notice of hearing shall contain the date, time and location of the hearing, the statutory authority for the hearing, a short summary of the matter to be considered and such other information as the department may deem appropriate.

(3) CONDUCT OF HEARING. (a) The presiding officer will open the hearing and make a concise statement of the scope and purposes of the hearing. Appearances will then be entered on the record. A person desiring to participate in the hearing shall enter his or her appearance in person by giving his or her name and address and the name and address of any party the person is representing and the capacity in which he or she is representing the party. Persons entering their appearance at the hearing may make statements and offer evidence relevant to the scope and purposes of the hearing. The hearing will be closed upon completion of the statements and submission of the evidence.

(b) The hearing may be tape recorded by the department. If the hearing is recorded and a transcript of the hearing is made by the department, copies will be furnished to any person who requests a transcript upon payment of a reasonable fee. If the hearing is recorded and no transcript is deemed necessary by the department and a person requests that one be prepared, the department instead will provide the person a copy of the tape recording of the hearing upon payment of a reasonable fee.

(c) The presiding officer will prepare a summary of the hearing for use by the department.

(4) WRITTEN COMMENTS. Any person may submit written comments on the permit application or permit review to the department during the public comment period provided for in the public notice or at any public hearing held. All written comments submitted to the department during the public comment period will have the same weight and effect as statements made by persons appearing at a public hearing.

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

NR 154.25 Procedures for alteration of permits by petition. (1) PETITION FOR ALTERATION. Any person holding an air pollution control permit who seeks an alteration of the permit shall file a written petition for alteration of the permit with the department. The petition shall identify the permit to be altered, outline the specific provisions for which alteration is sought, and set forth the reasons why alteration is sought. The petition shall be signed by the permit holder and shall be served on the secretary, either by personal delivery to the office of the secretary, or by mailing to the secretary at the following address: P.O. Box 7921, Madison, Wisconsin 53707.

(2) NOTICE AND PUBLIC COMMENT. (a) The department shall provide written notice of the petition for alteration by publishing a class 1 notice

under ch. 985, Stats., and by distributing a written notice to the persons listed under s. 144.392 (5) (a), Stats. The written notice shall contain a brief description of the alteration sought and reasons why alteration is sought, a notice of the opportunity for written public comment on the petition, and a notice of the opportunity to request a noncontested case public hearing on the petition.

(b) The department shall receive public comment on the petition for alteration for a 30-day period beginning when the department gives notice under par. (a).

(3) PUBLIC HEARING. The department may hold a noncontested case public hearing on the petition for alteration if a request for public hearing is received by the department under s. NR 154.24 within 30 days after the department gives notice under sub. (2) (a) and the department determines that there is a significant public interest in holding the hearing. A request for public hearing shall indicate the interest of the party filing the request and the reasons why a hearing is warranted. Any noncontested case public hearing held under this section shall be conducted in accordance with the procedures in s. NR 154.24.

(4) DEPARTMENT DECISION. The department may alter the permit in response to a petition for alteration. The department's decision under this subsection is effective unless a hearing on the decision is requested under s. 144.403, Stats. If the permit holder files a petition with the department within the time limit specified under s. 144.403 (1) (a), Stats., the air pollution control permit remains unaltered and in effect until 10 days after service of the decision issued under s. 144.403 (1), Stats., on the matter or a later date established by court order. If a person other than a permit holder files a petition for review with the department under s. 144.403, Stats., the department may stay the effect of its decision under this subsection pending the department's decision under s. 144.403, Stats., in accordance with s. 227.09 (1) (g), Stats. A stay may be granted only if the party seeking the stay has demonstrated that there is good cause for granting the stay and that the petitioner has a reasonable probability of success on the merits of the petition.

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