

Chapter NR 154

AIR POLLUTION CONTROL

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History: Chapter NR 154 as it existed on March 31, 1972 was repealed and a new chapter NR 154 was created, Register, March, 1972, No. 195, effective April 1, 1972.

FOREWORD

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

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

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

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

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

**NR 154.01 Definitions.** 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.

(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.

(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 commercial asbestos. Outside storage of asbestos materials is not considered a part of such a facility.

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

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

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

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

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

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

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

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

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

(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.

(29) "Blade coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a straight-edged blade that spreads the coating evenly over the full width of the substrate.

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

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

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

(33) "BTU" means British thermal unit.

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

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

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

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

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

(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.

(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 on-site construction, including site clearance, grading, dredging or landfilling specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(63) "Dry cleaning facility" means any facility engaged in the cleaning of fabrics 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

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disposal systems, holding tanks, pumps, and attendant piping and valves.

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

(65) "Emission" means a release, whether directly or indirectly, 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.

(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.

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

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

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

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

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

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

(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.

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

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

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

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

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

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

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

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

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

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

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

(91) "Green tire spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the

tire during molding and prevent the tire from sticking to the mold after curing.

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

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

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

(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.

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

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

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

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

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

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

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

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

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

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

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

(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.

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

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

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

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

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

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

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

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

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

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

(118) "Modification" 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.

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

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

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

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

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

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

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

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

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

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

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

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

(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.

(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 source at a different location.

(164m) "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.

(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.

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

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

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

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

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

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

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

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

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

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

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

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

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

(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.

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

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

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

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

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

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

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

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

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

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

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

(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.

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

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

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

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

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

(205) "Vapor-mounted seal" means any primary floating roof seal mounted so that there is an annular vapor space underneath the seal.

The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

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

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

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

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

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

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

**History:** Cr. Register, March, 1972, No. 195, eff. 4-1-72, renum. (41) (a) 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.

**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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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.

**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.

**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 subs. 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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(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) No person shall cause, suffer, allow or permit emissions of mercury:

(a) In such quantity and duration as to cause the ambient air concentration to exceed  $1 \mu\text{g}/\text{m}^3$ , averaged over a 30-day period;

(b) 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.

(4) **CONTROL OF ASBESTOS EMISSIONS.** (a) Asbestos mills: There shall be no visible emissions to the outside air from any asbestos mill except as provided in par. (f) of this section.

(b) Roadways: The surfacing of roadways with asbestos tailings is prohibited except for temporary roadways on an area of asbestos ore deposits. The deposition of asbestos tailings on roadways covered with snow or ice is considered "surfacing."

(c) Manufacturing: There shall be no visible emissions to the outside air, except as provided in par. (f) of this section, from any building or structure in which asbestos manufacturing operations are conducted or directly from any such operations if they are conducted outside of buildings or structures. An asbestos manufacturing operation means the com-

binning of commercial asbestos or, in the case of woven friction products, the combining of textiles containing commercial asbestos, with any other material(s), including commercial asbestos, and the processing of this combination into a product. Types of manufacturing operations include, but are not limited to:

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.

(d) Demolition: Any owner or operator of a demolition 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 or load-supporting structural member that is insulated or fireproofed with friable asbestos material shall comply with the requirements set forth in this paragraph.

1. Notice of intention to demolish shall be provided to the department at least 20 days prior to commencement of such demolition or any time prior to commencement of demolition subject to subd. 3. of this section. Such 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.
- d. Address or location of the building, structure, facility or installation.
- e. Scheduled starting and completion dates of demolition.
- f. Method of demolition to be employed.
- g. Procedures to be employed to meet the requirements of this paragraph.

2. The following procedures shall be used to prevent emissions of particulate asbestos material to outside air:

- a. Friable asbestos materials used to insulate or fireproof any boiler, pipe or load-supporting structural member shall be wetted and removed from any building, structure, facility or installation subject to this paragraph before wrecking of load-supporting structural members is com-

menced. Boilers, pipe or load-supporting structural members that are insulated or fireproofed with friable asbestos materials may be removed as units or in sections without stripping or wetting, except that where the boiler, pipe or load-supporting structural member is cut or disjointed, the exposed friable asbestos materials shall be wetted. The friable asbestos debris shall be wetted adequately to insure that such debris remains wet during all stages of demolition and related handling operations.

b. No pipe or load-supporting structural member that is covered with friable asbestos insulating or fireproofing material shall be dropped or thrown to the ground from any building, structure, facility or installation subject to this paragraph, but shall be carefully lowered or carried to ground level.

c. No friable asbestos debris shall be dropped or thrown to the ground from any building, structure, facility or installation subject to this paragraph or from any floor to any floor below. For buildings, structures, facilities or installations 50 feet or greater in height, friable asbestos debris shall be transported to the ground via dust-tight chutes or containers.

3. Any owner or operator of a demolition operation who intends to demolish a building, structure, facility or installation to which the provisions of this paragraph would be applicable but which has been declared by proper state or local authority to be structurally unsound and which is in danger of imminent collapse is exempt from the requirements of this paragraph other than the reporting requirements specified by subd. 1. of this section and the wetting of friable asbestos debris as specified by subd. 2.a. of this section.

(e) Spraying: There shall be no visible emissions to the outside air from the spray-on application of materials containing more than one percent asbestos, on a dry weight basis, used to insulate or fireproof equipment and machinery except as provided in par. (f) of this section. Spray-on materials used to insulate or fireproof 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 to insulate or fireproof buildings, structures, pipes, conduits, equipment and machinery shall report such intention to the department at least 20 days prior to the commencement of the spraying operation. Such 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.

(f) Rather than meet the no-visible-emission requirements of pars. (a), (c), and (e) of this section, an owner or operator may elect to use the methods specified below to clean emissions containing particulate asbestos material before such emissions escape to, or are vented to, the outside air.

1. Fabric filter collection devices must be used, except as noted in subds. 2. and 3. of this section. Such devices must be operated at a pressure drop of no more than 4 inches water gage as measured across the filter fabric. The airflow permeability, as determined by ASTM method D737-69 must not exceed 30 ft<sup>3</sup>/min/ft<sup>2</sup> for woven fabrics or 35 ft<sup>3</sup>/min/ft<sup>2</sup> for felted fabrics, except that 40 ft<sup>3</sup>/min/ft<sup>2</sup> for woven and 45 ft<sup>3</sup>/min/ft<sup>2</sup> for felted fabrics is allowed for filtering air from asbestos ore dryers. Each square yard of felted fabric must weigh at least 14 ounces and be at least one-sixteenth inch thick throughout. Synthetic fabrics must not contain fill yarn other than that which is spun.

Im. American Society for Testing and Materials, Part 24, 1971. Copies of Method D737-69, from Part 24 — Textile Materials; are available for inspection at the offices of the department of natural resources, Pyare Square Building, and secretary of state and revisor of statutes, State Capitol, Madison, Wisconsin, and may be procured for personal use from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa., 19103.

Note: The department of natural resources is now located at 101 South Webster Street, Madison, and the secretary of state is now located at 201 East Washington Avenue, Madison.

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 gage pressure.

3. The department may authorize the use of filtering equipment other than that described in subds. 1. and 2. of this section 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 section must 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) Where the presence of uncombined water is the sole reason for failure to meet the no-visible-emission requirements of pars. (a), (c) or (e) of this section, such failure shall not be a violation of such emission requirements.

(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) 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.

(d) 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.

**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.

**NR 154.20 Emergency episode levels and emergency emission control action programs.** (1) **EMERGENCY EPISODE LEVELS.** (a) "Alert": The alert level is that concentration of pollutants at which first stage control actions are to begin. An alert will be declared when any pollutant reaches the alert level specified below at any monitoring site and meteorological conditions are such that the pollutant concentrations can be expected to remain at the alert level for 12 or more hours or increase or,

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