

Chapter NR 154

AIR POLLUTION CONTROL

NR 154.01	Definitions (p. 581)	NR 154.14	Control of carbon monoxide emissions (p. 643)
NR 154.02	Applicability (p. 599)	NR 154.145	Control of lead emissions (p. 643)
NR 154.03	Registration of existing sources (p. 603)	NR 154.15	Control of nitrogen compound emissions (p. 644)
NR 154.04	Permit requirements and exemptions (p. 604)	NR 154.16	Use of standby fuel (p. 644)
NR 154.05	Action on applications (p. 604-6)	NR 154.17	Control of motor vehicles, internal combustion engines, and mobile sources (p. 644)
NR 154.055	Relocation of portable sources (p. 608)	NR 154.18	Malodorous emissions (p. 646)
NR 154.06	Operation and inspection of sources (p. 608)	NR 154.19	Control of hazardous pollutants (p. 647)
NR 154.07	County and regional programs (p. 612)	NR 154.20	Emergency episode levels and emergency emissions control action programs (p. 648-2)
NR 154.08	Enforcement and penalties (p. 613)	NR 154.21	Limitations on county, regional, or local regulations (p. 658)
NR 154.09	Emissions prohibited (p. 613)	NR 154.22	Severability (p. 658)
NR 154.10	Limitations on open burning (p. 613)	NR 154.24	Procedures for noncontested case public hearings (p. 658)
NR 154.11	Control of particulate emissions (p. 614)	NR 154.25	Procedures for alteration of permits by petition (p. 658-2)
NR 154.12	Control of sulfur emissions (p. 622-3)		
NR 154.13	Control of organic compound emissions (p. 622-6)		

History: Chapter NR 154 as it existed on March 31, 1972 was repealed and a new chapter NR 154 was created, Register, March, 1972, No. 195, effective April 1, 1972.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

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, clarifier, 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 renum., 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 renum., 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 renum. (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 154.02 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-

**Next page is numbered 601**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(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 or 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 151.18 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

**Next page is numbered 647**