

## Chapter NR 493

## AIR POLLUTION EPISODE LEVELS AND EPISODE EMISSION CONTROL ACTION PROGRAMS

NR 493.01 Applicability; purpose.  
NR 493.02 Definitions.  
NR 493.03 Episode levels.

NR 493.04 Emission control action programs.  
NR 493.05 Episode orders.

Note: Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1997, No. 493.

**NR 493.01 Applicability; purpose. (1) APPLICABILITY.** This chapter applies to all air contaminant sources and to their owners and operators.

**(2) PURPOSE.** This chapter is adopted under ss. 285.11, 285.13 and 285.85, Stats., to establish emergency episode level criteria and to establish programs and procedures for the abatement of such conditions.

Note: This chapter generally follows the federal guidance contained in 40 CFR part 51, Appendix L.

History: Cr. Register, September, 1986, No. 369, eff. 10-1-86; am. (1), Register, May, 1992, No. 437, eff. 6-1-92.

**NR 493.02 Definitions.** The definitions contained in ch. NR 400 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

**(1) "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 con-

tinuing 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.

History: Cr. (intro.) and (2), (1) renum. from NR 154.01 (10), Register, September, 1986, No. 369, eff. 10-1-86; am. (intro.), r. (2), Register, December, 1995, No. 480, eff. 1-1-96.

**NR 493.03 Episode levels. (1) AIR EPISODE ADVISORY.** The department may issue an Air Pollution Episode advisory to the general public if any air contaminant or combination of air contaminants reaches the respective level of concentration specified in Table 1 at any monitoring site.

**(2) AIR EPISODE LEVELS.** The department shall declare an Air Pollution Episode Level at the "Alert", "Warning" or "Emergency" stage if any air contaminant or combination of air contaminants reaches the respective level of concentration specified in Table 1 at any monitoring site and if meteorological conditions are such that the concentrations of the air contaminant can be expected to remain at or above that level for 12 or more hours, or in the case of ozone, to recur the following day at the same or a higher level, unless control actions are taken.

History: Cr. Register, July, 1985, No. 355, eff. 8-1-85; renum. from NR 493.01, Register, September, 1986, No. 369, eff. 10-1-86.

Table 1  
Episode Stage Criteria For Air Contaminants

Air Contaminants	Sampling Period	Averaging Period	Alert	Warning	Emergency
Particulate Matter	24-hours	Block average	375 $\mu\text{g}/\text{m}^3$	625 $\mu\text{g}/\text{m}^3$	875 $\mu\text{g}/\text{m}^3$
Sulfur Dioxide	1-hour	Any hour	1870 $\mu\text{g}/\text{m}^3$ (0.70 ppm)	3730 $\mu\text{g}/\text{m}^3$ (1.40 ppm)	4990 $\mu\text{g}/\text{m}^3$ (1.90 ppm)
	24-hours	Continuous running average	800 $\mu\text{g}/\text{m}^3$ (0.30 ppm)	1600 $\mu\text{g}/\text{m}^3$ (0.60 ppm)	2100 $\mu\text{g}/\text{m}^3$ (0.80 ppm)
Product of Particulate Matter and Sulfur Dioxide	24-hours	Block average	65,000 ( $\mu\text{g}/\text{m}^3$ ) <sup>2</sup>	261,000 ( $\mu\text{g}/\text{m}^3$ ) <sup>2</sup>	393,000 ( $\mu\text{g}/\text{m}^3$ ) <sup>2</sup>
Carbon Monoxide	8-hours	Continuous running average	17 $\text{mg}/\text{m}^3$ (15 ppm)	34 $\text{mg}/\text{m}^3$ (30 ppm)	46 $\text{mg}/\text{m}^3$ (40 ppm)
Ozone (for volatile organic compounds)	1-hour	Any hour	0.20 ppm (400 $\mu\text{g}/\text{m}^3$ )	0.40 ppm (800 $\mu\text{g}/\text{m}^3$ )	0.50 ppm (1000 $\mu\text{g}/\text{m}^3$ )
Nitrogen Dioxide	1-hour	Any hour	1130 $\mu\text{g}/\text{m}^3$ (0.60 ppm)	2260 $\mu\text{g}/\text{m}^3$ (1.20 ppm)	3000 $\mu\text{g}/\text{m}^3$ (1.60 ppm)

**NR 493.04 Emission control action programs.**

**(1)** Any person responsible for the operation of a direct source which emits 0.25 tons or more per day of any air contaminant for which air standards have been adopted shall prepare emission control action programs, consistent with good industrial practice and safe operating procedures, for reducing the emission of the air contaminants into the outdoor atmosphere during periods of an AIR POLLUTION ALERT, AIR POLLUTION WARNING, or AIR POLLUTION EMERGENCY declared under s. NR 493.03

**(2)** Emission control action programs shall be designed to reduce or eliminate emissions of air contaminants into the outdoor atmosphere in accordance with the requirements set forth in Tables 2 to 6.

**(2)** Emission control action programs as required under sub. (1) shall be in writing and show the source of air contamination, the approximate amount of reduction of contaminants, the

approximate time required to put the program into effect, a brief description of the manner in which the reduction will be achieved during each stage of an air pollution episode declared under s. NR 493.03 (2), and such other information as the department deems pertinent.

**(3)** The emission control action programs as required by sub. (1) shall be made available at all times on the premises of the operation to any person authorized to enforce the provisions of the department's episode procedure. A brief written description of the overall emission control action program, and the details of the program which affect specific functions of the overall operation, shall be posted at the locations where the functions are carried out.

**(4)** The emission control action programs as required by sub. (1) shall be submitted to the department upon request within 60 days of the receipt of the request; the emission control action programs shall be subject to review and approval by the department.

If, in the opinion of the department, an emission control action program does not effectively carry out the requirements set forth in Tables 2 to 6, the department may disapprove the emission control action program, state its reason for disapproval, and order the preparation of an amended emission control action program within the time period specified in the order. If the person responsible fails within the time period specified in the order to submit an amended emission control action program which, in the opinion of the department, meets the requirements of this chapter, the department may revise the emission control action program. The revised program will thereafter be the emission control action program which the person responsible shall put into effect upon declaration of an air pollution episode by the secretary.

**History:** Renum. from NR 154.20 (2) and am. Register, July, 1985, No. 355, eff. 8-1-85; renum. from NR 493.02, Register, September, 1986, No. 369, eff. 10-1-86; am. (2) and (3), Register, December, 1995, No. 480, eff. 1-1-96; correction in (1) and (4) made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1995, No. 480; am. (2), Register, January, 1997, No. 493, eff. 2-1-97.

**NR 493.05 Episode orders.** The following are orders which may be appropriate for use by the secretary under s. 285.85, Stats., upon declaration under s. NR 493.03 (2) that an air pollution episode exists for any air contaminant for which an air standard has been adopted or for any combination of air contaminants:

**(1) AIR POLLUTION ALERT.** (a) *Any air contaminant or combination of air contaminants.* Any person responsible for the operation of a source of air contamination as set forth in s. NR 493.04 (1) shall take all AIR POLLUTION ALERT actions as required for such source of air contamination, and shall particularly put into effect the emission control action program for an AIR POLLUTION ALERT declared under s. NR 493.03 (2).

(b) *Particulate matter.* 1. No person may open burn any tree wastes, vegetation, refuse, or debris in any form.

2. The use of incinerators for the disposal of any form of solid waste shall be limited to the hours between 12:00 noon and 4:00 p.m.

3. Persons operating fuel-burning equipment which requires intermittent boiler lancing or soot blowing shall perform such operations, to the maximum extent possible, between the hours of 12:00 noon and 4:00 p.m.

(c) *Nitrogen oxides.* 1. No person may open burn any tree waste, vegetation, refuse, or debris in any form.

2. The use of incinerators for the disposal of any form of solid waste shall be limited to the hours between 12:00 noon and 4:00 p.m.

**(2) AIR POLLUTION WARNING.** (a) *Any air contaminant or combination of air contaminants.* Any person responsible for the operation of a source of air contamination as set forth in s. NR 493.04 (1) shall take all AIR POLLUTION WARNING actions as required for such source of air contamination, and shall particularly put into effect the emission control action program for an AIR POLLUTION WARNING declared under s. NR 493.03 (2).

(b) *Particulate matter.* 1. No person may open burn any tree waste, vegetation, refuse, or debris in any form.

2. No person may use incinerators for the disposal of any form of solid waste or liquid waste.

3. Persons operating fuel-burning equipment which requires intermittent boiler lancing or soot blowing shall perform such operations, to the maximum extent possible, between the hours of 12:00 noon and 4:00 p.m.

(c) *Nitrogen oxides.* 1. No person may open burn any tree waste, vegetation, refuse, or debris in any form.

2. No person may use incinerators for the disposal of any form of solid waste or liquid waste.

**(3) AIR POLLUTION EMERGENCY.** (a) *Any air contaminant or combination of air contaminants.* 1. Any person responsible for

the operation of a source of air contamination set forth in s. NR 493.04 (1) shall take all AIR POLLUTION EMERGENCY actions as required for such source of air contamination, and shall particularly put into effect the emission control action program for an AIR POLLUTION EMERGENCY declared under s. NR 493.03 (2).

2. All manufacturing establishments, including those too small to be included under s. NR 493.04 (1), shall institute such action as will result in maximum reduction of air contaminants from their operations by ceasing, curtailing, or postponing operations which emit air contaminants to the extent possible without causing injury to persons or damage to equipment.

3. All places of employment described in this subdivision shall immediately cease operations except for those operations necessary to provide emergency services or products or to prevent personal injury or property loss or damage:

a. Mining and quarrying of nonmetallic minerals.

b. All contract construction work.

c. Wholesale trade establishments which are primarily engaged in selling merchandise to retailers, to industrial, commercial, institutional or professional users, or to other wholesalers, or acting as agents in buying merchandise for or selling merchandise to such persons or companies.

d. All offices of local, county, and state government and any other public body, except for those offices providing emergency services such as fire or police protection, medical services, or protection of public health and the environment, and those offices that must continue to operate in order to enforce the requirements of this order.

e. All retail trade establishments, except pharmacies and stores primarily engaged in the sale of food.

f. Banks, credit agencies, securities and commodities brokers, dealers, exchanges and services, offices of insurance carriers, agents and brokers, and real estate offices.

g. Wholesale and retail dry cleaners, photographic studios, beauty shops, barber shops, shoe repair shops and other establishments providing personal services.

h. Business services such as advertising offices, consumer credit reporting agencies, copying, duplicating, mailing, stenographic services, equipment rental services and commercial testing laboratories.

i. Auto body shops, vehicle paint shops and car washes.

j. Establishments rendering amusement and recreation services, including motion picture theaters.

k. Elementary and secondary schools, colleges, universities, professional schools, junior colleges, vocational schools, and public and private libraries.

4. No person may open burn any tree waste, vegetation, refuse or debris in any form.

5. No person may use incinerators for the disposal of any form of solid or liquid waste.

6. No person may use a motor vehicle except as necessary to provide or obtain emergency services or products or to prevent personal injury or property loss or damage.

**(4) EPISODE ACTION.** When the secretary determines that an air pollution episode condition exists at one or more monitoring sites solely because of emissions from a limited number of sources, the secretary may order such source or sources to put into effect the emission control action programs which are applicable for each episode stage.

**History:** Renum. from NR 154.20 (3) and am. Register, July, 1985, No. 355, eff. 8-1-85; renum. from NR 493.03, Register, September, 1986, No. 369, eff. 10-1-86; am. (3) (a) 2. and 3. intro., 2., 4., g. and h., 5. and Table 5, r. and recr. (3) (a) 3. i., Register, May, 1992, No. 437, eff. 6-1-92.

**Table 2**  
**Emission Reduction Requirements For Particulate Matter**

Source of Air Contamination	Air Pollution Alert	Air Pollution Warning	Air Pollution Emergency
(1) Coal or oil-fired electric power generating facilities.	(a) 1. Substantial reduction of particulates by utilization of fuels having lowest available ash content. 2. Maximum utilization of midday (12:00 Noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. 3. Substantial reduction of particulates by diverting electric power generation to facilities outside of Alert Area	(b) 1. Maximum reduction of particulates by utilization of fuels having lowest available ash content. 2. Maximum utilization of midday (12:00 Noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. 3. Maximum reduction of particulates by diverting electric power generation to facilities outside of Warning Area.	(c) 1. Maximum reduction of particulates by utilization of fuels having lowest available ash content. 2. Maximum utilization of midday (12:00 Noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. 3. Maximum reduction of particulates by diverting electric power generation to facilities outside of Emergency Area.
(2) Coal or oil-fired process steam generating facilities.	(a) 1. Substantial reduction of particulates by utilization of fuels having lowest available ash content.  2. Maximum utilization of midday (12:00 Noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. 3. Reduction of steam load demands consistent with continuing plant operations.	(b) 1. Maximum reduction of particulates by utilization of fuels having lowest available ash content.  2. Maximum utilization of midday (12:00 Noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. 3. Reduction of steam load demands consistent with continuing plant operations. 4. Making ready for use a plan of action to be taken if an emergency develops.	(c) 1. Maximum reduction of particulates by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage. 2. Maximum utilization of midday (12:00 Noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. 3. Taking the action called for in the emergency portion of the emission control action program.
(3) Manufacturing, processing, and mining industries. OR Other persons required by the department to prepare emission control action programs.	(a) 1. Substantial reduction of particulates from manufacturing operations by curtailing, postponing, or deferring production and allied operations.  2. Maximum reduction of particulates by deferring trade waste disposal operations which emit particles, gases, vapors or malodorous substances. 3. Reduction of heat load demands for processing consistent with continuing plant operations.	(b) 1. Maximum reduction of particulates from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.  2. Maximum reduction of particulates by deferring trade waste disposal operations which emit particles, gases, vapors or malodorous substances. 3. Reduction of heat load demands for processing consistent with continuing plant operations.	(c) 1. Elimination of particulates from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment. 2. Elimination of particulates from trade waste disposal processes which emit particles, gases, vapors or malodorous substances. 3. Maximum reduction of heat load demands for processing.
(4) Refuse disposal operations.	(a) 1. Maximum reduction of particulates by prevention of open burning. 2. Substantial reduction of particulates by limiting burning of refuse in incinerators to the hours between 12:00 Noon and 4:00 p.m.	(b) 1. Maximum reduction of particulates by eliminating open burning. 2. Complete elimination of the use of incinerators.	(c) 1. Maximum reduction of particulates by eliminating open burning. 2. Complete elimination of the use of incinerators.

**Table 3**  
**Emission Reduction Requirements For Sulfur Oxides**

Source of Air Contamination	Air Pollution Alert	Air Pollution Warning	Air Pollution Emergency
(1) Coal or oil-fired electric power generating facilities.	(a) 1. Substantial reduction of sulfur dioxide by utilization of fuels having lowest available sulfur content. 2. Substantial reduction of sulfur dioxide by diverting electric power generation to facilities outside of Alert Area.	(b) 1. Maximum reduction of sulfur dioxide by utilization of fuels having lowest available sulfur content. 2. Maximum reduction of sulfur dioxide by diverting electric power generation to facilities outside of Warning Area.	(c) 1. Maximum reduction of sulfur dioxide by utilization of fuels having lowest available sulfur content. 2. Maximum reduction of sulfur dioxide by diverting electric power generation to facilities outside of Emergency Area.
(2) Coal or oil-fired process steam generating facilities.	(a) 1. Substantial reduction of sulfur dioxide by utilization of fuels having lowest available sulfur content.  2. Reduction of steam load demands consistent with continuing plant operations.	(b) 1. Maximum reduction of sulfur dioxide by utilization of fuels having the lowest available sulfur content.  2. Reduction of steam load demands consistent with continuing plant operations. 3. Reduction of heat load demands for processing consistent with continuing plant operations.	(c) 1. Maximum reduction of sulfur dioxide by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage. 2. Taking the action called for in the emergency portion of the emission control action programs.

Table 3 (continued)  
Emission Reduction Requirements For Sulfur Oxides

Source of Air Contamination	Air Pollution Alert	Air Pollution Warning	Air Pollution Emergency
(3) Manufacturing and processing industries. OR Other persons required by the department to prepare emission control action programs.	<p>(a) 1. Substantial reduction of sulfur dioxide from manufacturing operations by curtailing, postponing, or deferring production and allied operations.</p> <p>2. Maximum reduction of sulfur dioxide by deferring trade waste disposal operations which emit particles, gases, vapors or malodorous substances.</p> <p>3. Reduction of heat load demands for processing consistent with continuing plant operations.</p>	<p>(b) 1. Maximum reduction of sulfur dioxide from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.</p> <p>2. Maximum reduction of sulfur dioxide by deferring trade waste disposal operations which emit particles, gases, vapors or malodorous substances.</p> <p>3. Reduction of heat load demands for processing consistent with continuing plant operations.</p>	<p>(c) 1. Elimination of sulfur dioxide from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.</p> <p>2. Elimination of sulfur dioxide from trade waste disposal processes which emit particles, gases, vapors or malodorous substances.</p> <p>3. Maximum reduction of heat load demands for processing.</p>

Table 4  
Emission Reduction Requirements For Nitrogen Oxides

Source of Air Contamination	Air Pollution Alert	Air Pollution Warning	Air Pollution Emergency
(1) Steam-electric power generating facilities.	<p>(a) 1. Substantial reduction of nitrogen oxides by utilization of fuel which results in the formation of less air contaminant.</p> <p>2. Substantial reduction of nitrogen oxides by diverting electric power generation to facilities outside of Alert Area.</p>	<p>(b) 1. Maximum reduction of nitrogen oxides by utilization of fuel which results in the formation of the least amount of air contaminant.</p> <p>2. Maximum reduction of nitrogen oxides by diverting electric power generation to facilities outside of Warning Area.</p>	<p>(c) Maximum reduction of nitrogen oxides by diverting electric power generation to facilities outside of Emergency Area.</p>
(2) Process steam generating facilities.	<p>(a) 1. Substantial reduction of nitrogen oxides by utilization of fuel which results in the formation of less air contaminant.</p> <p>2. Reduction of steam load demands consistent with continuing plant operations.</p>	<p>(b) 1. Maximum reduction of nitrogen oxides by utilization of fuel which results in the formation of less air contaminant.</p> <p>2. Reduction of steam load demands consistent with continuing plant operations.</p> <p>3. Making ready for use a plan of action to be taken if an emergency develops.</p>	<p>(c) Maximum reduction of nitrogen oxides by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage.</p>
(3) Manufacturing and processing industries. OR Other persons required by the department to prepare emission control action programs.	<p>(a) 1. Substantial reduction of nitrogen oxides from manufacturing operations by curtailing, postponing, or deferring production and allied operations.</p> <p>2. Maximum reduction of nitrogen oxides by deferring trade waste disposal operations which emit particles, gases, vapors or malodorous substances.</p> <p>3. Reduction of heat load demands for processing consistent with continuing plant operations.</p>	<p>(b) 1. Maximum reduction of nitrogen oxides from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing, production and allied operations.</p> <p>2. Maximum reduction of nitrogen oxides by deferring trade waste disposal operations which emit particles, gases, vapors or malodorous substances.</p> <p>3. Reduction of heat load demands for processing consistent with continuing plant operations.</p>	<p>(c) 1. Elimination of nitrogen oxides from manufacturing operations by ceasing, curtailing, postponing, or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.</p> <p>2. Elimination of nitrogen oxides from trade waste disposal processes which emit particles, gases, vapors or malodorous substances.</p> <p>3. Maximum reduction of heat load demands for processing.</p>
(4) Stationary internal combustion engines.	<p>(a) Reduction of power demands for pumping consistent with continuing operations.</p>	<p>(b) 1. Reduction of power demands for pumping consistent with continuing operations.</p> <p>2. Maximum reduction of nitrogen oxides by utilization of fuels or power source which results in the formation of less air contaminant.</p>	<p>(c) 1. Maximum reduction of nitrogen oxides by reducing power demands to absolute necessities consistent with personnel safety and preventing equipment damage.</p> <p>2. Maximum reduction of nitrogen oxides by utilization of fuels or power source which results in the formation of less air contaminant.</p>

**Table 5**  
**Emission Reduction Requirements For Volatile Organic Compounds For Control Of Ozone**

Source of Air Contamination	Air Pollution Alert	Air Pollution Warning	Air Pollution Emergency
(1) Petroleum products storage and distribution.	(a) Substantial reduction of volatile organic compounds by curtailing, postponing, or deferring transfer operations.	(b) Maximum reduction of volatile organic compounds by assuming reasonable economic hardship by postponing transfer operations.	(c) Elimination of volatile organic compounds by curtailing, postponing, or deferring transfer operations to the extent possible without causing damage to equipment.
(2) Surface coating and preparation.	(a) Substantial reduction of volatile organic compounds by curtailing, postponing, or deferring surface preparation and coating application operations.	(b) Maximum reduction of volatile organic compounds by assuming reasonable economic hardship by postponing surface preparation and coating application operations.	(c) Elimination of volatile organic compounds by curtailing, postponing, or deferring surface preparation and coating application operations to the extent possible without causing damage to equipment.
(3) Manufacturing and processing industries. OR Other persons required by the department to prepare emission control action programs.	(a) Substantial reduction of volatile organic compounds from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	(b) Maximum reduction of volatile organic compounds from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	(c) Elimination of volatile organic compounds from manufacturing operations by ceasing, curtailing, postponing, or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.

**Table 6**  
**Emission Reduction Requirements For Carbon Monoxide**

Source of Air Contamination	Air Pollution Alert	Air Pollution Warning	Air Pollution Emergency
(1) Manufacturing industries. OR Other persons required by the department to prepare emission control action programs.	(a) Substantial reduction of carbon monoxide from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	(b) Maximum reduction of carbon monoxide from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	(c) Elimination of carbon monoxide from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.
(2) Refuse disposal operations.	(a) Maximum reduction of carbon monoxide by eliminating open burning.	(b) Maximum reduction of carbon monoxide by eliminating open burning.	(c) Maximum reduction of carbon monoxide by eliminating open burning.

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