

401 KAR 55:005 Significant harm criteria.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department For Environmental Protection
Division for Air Quality

Relates to: KRS Chapter 224.20-100, 223.20-110, 224.20-120

Statutory Authority: KRS 224.10-100

Necessity and Function: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulation for the prevention, abatement and control of air pollution. This regulation defines those levels of pollutant concentration which must be prevented in order to avoid significant harm to the health of persons.

Section 1. Purpose. Notwithstanding any other provision of the regulations of the Division for Air Quality, this chapter is designed to prevent ambient pollutant concentrations at any location from reaching the following levels which could cause significant harm to the health of persons.

- (1) Sulfur dioxide: 2,620 micrograms per cubic meter (1.0 ppm), twenty-four (24) hour average.
- (2) Particulate matter, measured as PM₁₀: 600 micrograms per cubic meter, twenty-four (24) hour average.
- (3) Carbon monoxide: 57.5 milligrams per cubic meter (fifty (50) ppm), eight (8) hour average. 86.3 milligrams per cubic meter (seventy-five (75) ppm), four (4) hour average. 144 milligrams per cubic meter (125 ppm), one (1) hour average.
- (4) Ozone: 1,200 micrograms per cubic meter (0.6 ppm), one (1) hour average.
- (5) Nitrogen dioxide: 3,750 micrograms per cubic meter (2.0 ppm), one (1) hour average. 938 micrograms per cubic meter (0.5 ppm), twenty-four (24) hour average.

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401 KAR 55:010. Episode criteria.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection
Division for Air Quality

Relates to: KRS 224.320, 224.330, 224.340

Pursuant to: KRS 224.033

Necessity and Function: KRS 224.033 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation defines those levels of pollutant concentrations which justify the proclamation of an air pollution alert, air pollution warning, and air pollution emergency.

Section 1. General. Conditions justifying the proclamation of an air pollution alert, air pollution warning, or air pollution emergency shall be deemed to exist whenever the department determines that the accumulation of air contaminants in any place is attaining or has attained levels which could, if such levels are sustained or exceeded, present a threat to the health of the public. In making this determination, the department shall be guided by the criteria specified in the following sections.

Section 2. Air Pollution Forecast. An internal watch by the department shall be activated by a national weather service advisory that an atmospheric stagnation advisory or special dispersion statement is in effect.

Section 3. Alert. An alert is that concentration of pollutants at which first stage control actions are to begin. An alert will be declared when any one (1) of the alert levels specified in Appendix A of this regulation is reached at any monitoring site and meteorological conditions are such that the pollutant concentrations can be expected to remain at these levels for twelve (12) or more hours or increase, or in the case of ozone the situation is likely to reoccur within the next twenty-four (24) hours, unless control actions are taken.

Section 4. Warning. A warning level indicates that air quality is continuing to degrade and that additional control actions are necessary. A warning will be declared when any one (1) of the warning levels specified by Appendix A of this regulation is reached at any monitoring site and meteorological conditions are such that pollutant concentrations can be expected to remain at these levels for twelve (12) or more hours or increase, or in the case of ozone the situation is likely to reoccur within the next twenty-four (24) hours, unless control actions are taken.

Section 5. Emergency. An emergency level indicates that air quality is continuing to degrade to a level that should never be reached and that the most stringent control actions are necessary. An emergency will be declared when any one (1) of the emergency levels specified in Appendix A of this regulation is reached at any monitoring site and meteorological conditions are such that this condition can be expected to continue for twelve (12) or more hours or increase, or in the case of ozone, the situation is likely to reoccur within the next twenty-four (24) hours, unless control actions are taken.

Section 6. Termination. Any status declared by the application of these criteria will remain in effect until the criteria for that level are no longer met. At such time the next lower appropriate status will be assumed.

Section 7. An episode status based on the deterioration of air quality alone

may be declared. An air stagnation advisory or special dispersion statement need not be in effect.

Section 8. An appropriate episode status shall be declared when any monitoring site records ambient air quality levels as designated in the episode criteria herein. The criteria shall be applied to individual monitoring sites and not to area wide air quality.

[SIP Compilation Table After Appendix]

**APPENDIX A TO 401 KAR 55:010
EPISODE CRITERIA**

POLLUTANT	ALERT	WARNING	EMERGENCY
Sulfur Dioxide 24-hr avg	800ug/m ³ (.3ppm)	1,600ug/m ³ (.6ppm)	2,100ug/m ³ (.8ppm)
Particulates, measured as PM ₁₀ 24-hr avg	350ug/m ³	420ug/m ³	500ug/m ³
Carbon Monoxide 8-hr avg	15ppm	30ppm	40ppm
Ozone 1-hr avg	0.2ppm	0.4ppm	0.5ppm
Nitrogen Dioxide 1-hr avg	1130ug/m ³ (.6ppm)	2260ug/m ³ (1.2ppm)	3000ug/m ³ (1.6ppm)
24-hr avg	282ug/m ³ (.15ppm)	565ug/m ³ (.3ppm)	750 ug/m ³ (.4ppm)

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401 KAR 55:015. Episode declaration.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection
Division for Air Quality

Relates to: KRS Chapter 224

Pursuant to: KRS 13.082, 224.033

Necessity and Function: KRS 224.033 requires the Cabinet for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation requires the owner or operator of an air contaminant source to take action to reduce air contaminant emissions whenever an air pollution alert, air pollution warning, or air pollution emergency is declared.

Section 1. General.

- (1) The intent of this regulation is to provide for the curtailment or reduction of processes or operations which emit an air contaminant or an air contaminant precursor whose criteria has been reached and are located in the affected area for which an episode level has been declared.
- (2) Any person responsible for the operation of an air contaminant source as set forth in 401 KAR 55:020 shall take all actions required by this regulation irrespective of any economic hardship which may be incurred due to such actions.
- (3) When the director determines that specified criteria are being approached and may be reached at one (1) or more monitoring sites solely because of emissions from a limited number of sources or processes, he may act to prevent the attainment of the episode level by notifying such source(s) that the abatement strategies as described in 401 KAR 55:020 or the standby plans are required are required insofar as it applies to such source(s), and shall be put into effect until a satisfactory reduction in the ambient pollution concentration has been achieved.

Section 2. Air Pollution Alert. When the director declares an air pollution alert, any person responsible for the operation of a source of air contaminants as set forth in 401 KAR 55:020, Section 2, shall take all air pollution alert actions required for such sources of air contaminants and shall put into effect the preplanned strategies for an air pollution alert.

Section 3. Air Pollution Warning. When the secretary declares an air pollution warning, any person responsible for the operation of a source of air contaminants as set forth in 401 KAR 55:020, Section 3, shall take all air pollution warning actions required for such sources of air contaminants and shall put into effect the preplanned strategy for an air pollution warning.

Section 4. Air Pollution Emergency. When the governor declares an air pollution emergency, any person responsible for the operation of a source of air contaminants described in 401 KAR 55:020, Section 4, shall take all air pollution emergency actions required for such sources of air contaminants and shall put into effect the preplanned strategy for an air pollution emergency.

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401 KAR 55:020. Abatement strategies.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection
Division for Air Quality

Relates to: KRS Chapter 224

Pursuant to: KRS 13.082, 224.033

Necessity and Function: KRS 224.033 requires the Cabinet for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation sets forth in detail action that must be taken by air contaminant sources when an episode is declared.

Section 1. Standby plans.

- (1) Any person responsible for the operation of a source of air pollutants as set forth in Sections 2 to 4, shall prepare standby plans for reducing the emission of air pollutants during episode periods (air pollution alert, warning, and emergency). Standby plans shall be designed to reduce or eliminate emission of air pollutants in accordance with the objectives set forth in Sections 2 to 4.
- (2) Any person responsible for the operation of a source of air pollutants not set forth under subsection (1) of this section shall, when requested by the director in writing, prepare standby plans for reducing the emission of air pollutants during episodic periods. Standby plans shall be designed to reduce or eliminate emissions of air pollutants in accordance with the objectives set forth in Sections 2 to 4.
- (3) Standby plans as required under subsections (1) and (2) of this section shall be in writing and identify the source of air pollutants, and a brief description of the manner in which the reduction will be achieved during episode periods.
- (4) During episode periods, standby plans required by this section shall be made available on the premises to any person authorized to enforce the provisions of the standby plan.
- (5) Standby plans required by this section shall be submitted to the department upon request within thirty (30) days of the receipt of such request; such plans shall be subject to review and approval by the department. If in the opinion of the department, a plan does not effectively carry out the objectives as set forth in Sections 2 to 4, the cabinet may disapprove it state its reasons for disapproval and order the preparation of an amended plan within the time period specified in the order.

Section 2. Abatement strategies; alert level.

- (1) General requirements:
 - (a) When an alert is declared on reaching the criteria level for particulates or sulfur dioxide, the following actions shall be taken:
 1. There shall be no open burning by any person of tree waste, vegetation, refuse or debris.

2. The use of incinerators for the disposal of any form of solid waste shall be limited to the hours of 12 noon and 4 p.m., local time.
 3. Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12 noon and 4 p.m., local time.
- (b) When an alert is declared based on reaching the criteria level for ozone, carbon monoxide or nitrogen dioxide the following actions shall be taken:
1. Persons operating motor vehicles shall eliminate all unnecessary operations.
 2. Persons operating petroleum loading and dry cleaning facilities shall reduce hydrocarbon emissions by twenty-five (25) percent.
 3. Road repairs should be postponed to alleviate traffic congestion.
- (2) Curtailment of particulate and/or sulfur dioxide sources. When an alert is declared based on reaching the criteria level for particulates and/or sulfur dioxide, control actions as described in paragraphs (a), (b), and (c) of this subsection shall be implemented.
- (a) When the source of air contaminant is fuel fired electric power generating facilities: substantial reduction of emissions shall be accomplished by utilization of fuels having low ash and sulfur content; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing; and diverting electric power generation to facilities outside of the alert area.
- (b) When the source of air contaminant is fuel fired process steam generating facilities: substantial reduction of emissions shall be accomplished by utilization of fuels having low ash and sulfur content; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing; and substantial reduction of steam load demands consistent with continuing plant operations.
- (c) When the source of air contaminant is manufacturing industries including but not limited to the following classifications; primary metals industry, petroleum refining operations, chemical industries, mineral processing industries, paper and allied products and grain industry the following action shall be taken:
1. All operations that emit particulate or sulfur dioxide shall curtail, postpone, or defer production to the extent necessary to effect at least a twenty-five (25) percent reduction of the instantaneous particulate and/or sulfur dioxide emission levels existing at the time the alert is declared unless such reduction of the operation is demonstrated to the director's satisfaction to be impractical because of some physical limitation of the operation.
 2. In addition, maximum reduction of emissions shall be

accomplished by deferring trade waste disposal operations which emit solid particles, gas vapors, or malodorous substances; maximum reduction of heat load demands for processing consistent with subparagraph 1 of this paragraph; and maximum utilization of mid-day (12 to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

- (3) Curtailment of sources of hydrocarbons and nitrogen oxides. When an alert is declared based on reaching the criteria level for ozone or nitrogen dioxide, control actions described in paragraphs (a), (b), and (c) of this subsection shall be implemented.
- (a) When the source of air contaminant is fuel fired electric power generating facilities, substantial reduction of emissions shall be accomplished by diverting electric power generation to facilities outside of the alert area.
- (b) When the source of air contaminant is fuel fired process steam generating facilities, substantial reduction of emissions shall be accomplished by substantial reduction of steam load demands consistent with continuing plant operation.
- (c) When the source of air contaminant is manufacturing industry including but not limited to the following classifications: surface coating, degreasing, nitric acid production, fertilizer manufacturing and any other hydrocarbon or nitrogen oxide emitting sources; the following action shall be taken:
1. All operations that emit hydrocarbons and/or nitrogen oxides shall curtail, postpone, or defer production to the extent necessary to effect at least a twenty-five (25) percent reduction of the instantaneous hydrocarbon and/or nitrogen oxide emission levels existing at the time the alert is declared unless such reduction of the operation is demonstrated to the director's satisfaction to be impractical because of some physical limitation of the operation.
 2. In addition, maximum reduction of emissions shall be accomplished by deferring trade waste disposal operations which emit solid particles, gas vapors or malodorous substances; and maximum reduction of heat load demand for processing consistent with subparagraph 1. of this paragraph.
- (4) Curtailment of sources of carbon monoxide. When an alert is declared based on reaching the criteria level for carbon monoxide, the control actions are: When the source of carbon monoxide is manufacturing industry including but not limited to the following classifications: primary metal industry, petroleum refining operations, and other carbon monoxide emitting sources; the following actions shall be taken: All operations that emit carbon monoxide shall curtail, postpone, or defer production to the extent necessary to effect at least a twenty-five (25) percent reduction of the instantaneous carbon monoxide emissions levels existing at the time the alert is declared unless the reduction of the operation is demonstrated to the director's satisfaction to be impractical because of some physical limitations of the operation.

Section 3. Abatement strategies: Warning Level.

- (1) General requirements:

- (a) When a warning is declared on reaching the criteria level for particulates or sulfur dioxide the following actions shall be taken:
 - 1. There shall be no open burning by any person of tree waste, vegetation, refuse or debris in any form.
 - 2. The use of incinerators for the disposal of any form of solid waste or liquid waste shall be prohibited.
 - 3. Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12 noon and 4 p.m., local time.
 - (b) When a warning is declared based on reaching the criteria level for ozone, carbon monoxide or nitrogen dioxide the following actions shall be taken:
 - 1. Persons operating motor vehicles must reduce operation by the use of car pools and increased use of public transportation and the elimination of unnecessary operation.
 - 2. Persons operating petroleum loading and dry cleaning facilities shall reduce hydrocarbon emissions by fifty (50) percent.
 - 3. Road repairs should be postponed to alleviate traffic congestion.
- (2) Curtailment of particulate and/or sulfur dioxide sources. When a warning is declared based on reaching the criteria level for particulates and/or sulfur dioxide, control actions as described in paragraphs (a), (b), and (c) of this subsection shall be implemented.
- (a) When the source of air contaminant is fuel fired electric power generating facilities: maximum reduction of emissions shall be accomplished by utilization of fuels having lowest ash and sulfur content; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing; and diverting electric power generation to facilities outside of the warning area.
 - (b) When the source of air contaminant is fuel fired process steam generating facilities associated with manufacturing industries subject to paragraph (d) of this subsection: maximum reduction of emissions shall be accomplished by utilization of fuels having lowest available ash and sulfur content; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing; making ready for use a plan of action to be taken if an emergency develops; and maximum reduction of steam load demands consistent with continuing plant operations.
 - (c) When the source of air contaminant is fuel fired process steam generating facilities not subject to paragraph (b) of this subsection: maximum reduction of emissions shall be consistent with preventing injury to persons or damage to equipment; and maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.
 - (d) When the source of air contaminant is manufacturing industries which may require considerable lead time for shutdown including but not limited to the following classifications: petroleum refining, chemical industries, primary metals industries, glass

industries, paper and allied products; the source initiate action required to accomplish the following objectives:

1. Cease, curtail, postpone or defer production and all operations as is necessary to prepare for an immediate shutdown if an emergency is declared.
2. Effect a maximum reduction of emissions of air contaminants from manufacturing operations during the time period the warning is in effect by ceasing, curtailing, postponing, or deferring production and all operations.
3. Effect a maximum reduction of emissions by deferring trade waste disposal operations which emit solid particles, gases, vapors, or malodorous substances; maximum reduction of heat load demands for processing consistent with subparagraphs 1. and 2. of this paragraph; and maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

(e) When the source of air contaminant is manufacturing industries which may require relatively short lead times for shutdown including but not limited to the following classifications: primary metals industries, chemical industries, mineral processing industries and grain industry; the source shall initiate action required to accomplish the following objectives:

1. Elimination of air contaminants from manufacturing operations by ceasing, as expeditiously as possible, all operations which are not necessary for the prevention of injury to persons or damage to equipment; and by curtailing, as expeditiously as possible, all operations which are necessary for the prevention of injury to persons or damage to equipment to the maximum extent possible such that the curtailment does not cause injury to person or damage to equipment.
2. Elimination of the emission of air contaminants by ceasing trade waste disposal processes which emit solid particles, gases, vapors, or malodorous substances; maximum reduction of heat load demands consistent with subparagraph 1. of this paragraph; and maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

(3) Curtailment of sources of hydrocarbons and nitrogen oxides. When a warning is declared based on reaching the criteria level for oxidants or nitrogen dioxide, control actions described in paragraphs (a) and (b) of this subsection shall be implemented.

- (a) When the source of air contaminant is fuel fired electric power generating facilities or is fuel fired process steam generating facilities, the provisions of subsection (2) (a) and (c) of this section shall apply.
- (b) When the source of air contaminant is manufacturing industry including but not limited to the following classifications: surface coating, degreasing, nitric acid production, fertilizer manufacturing and any other hydrocarbon or nitrogen oxide emitting sources; the source shall initiate action required to accomplish the objectives specified in subsection (2) (e) 1. and 2. of this section.

(4) Curtailment of sources of carbon monoxide. When a warning is declared

based on reaching the criteria level for carbon monoxide, the control actions described as follows shall be implemented: When the source of carbon monoxide is manufacturing industry including but not limited to the following classifications: primary metal industry, petroleum refining operations, and other carbon monoxide emitting sources, the sources shall initiate action required to accomplish the objectives specified in subsection (2)(e)1. and 2. of this section.

Section 4. Abatement Strategies: Emergency Level.

- (1) General requirements. When an emergency is declared based on reaching the criteria level for any air contaminant the following shall apply:
 - (a) There shall be no open burning by any person of tree waste, vegetation, refuse, or debris in any form.
 - (b) The use of incinerators for the disposal of any form of solid or liquid waste shall be prohibited.
 - (c) All places of employment described below shall immediately cease operations:
 1. Mining and quarrying of nonmetallic minerals.
 2. All construction work except that which must proceed to avoid emergent physical harm.
 3. All manufacturing establishments except those required to have in force an air pollution emergency plan.
 4. Wholesale trade establishments: i.e., places of business 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.
 5. All offices of local, county, and state government including authorities, joint meetings, and other public bodies excepting such agencies which are determined by the chief administrative officer of local, county, or state government, authorities, joint meetings, and other public bodies to be vital for public safety and welfare and the enforcement of the provisions of this order.
 6. All retail trade establishments except pharmacies and stores primarily engaged in the sale of food.
 7. Banks; credit agencies other than banks; securities and commodities brokers, dealers, and exchanges and services; offices of insurance carriers, agents and brokers; real estate offices.
 8. Wholesale and retail laundries, laundry services; photographic studios; beauty shops, barbershops, shoe repair shops.
 9. Advertising officers; consumer credit reporting, adjustment and collection agencies; duplication, addressing, blueprinting; photocopying, mailing list and stenographic services; equipment rental services, commercial testing

laboratories.

10. Automobile repair, automobile services, garages.
 11. Establishments rendering amusement and recreation services including motion picture theaters.
 12. Elementary and secondary schools, colleges, universities, professional schools, junior colleges, vocational school, and public and private libraries.
- (d) All commercial and manufacturing establishments not included in this order will institute such actions 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.
- (e) The use of motor vehicles is prohibited except in emergencies with the approval of local or state police.
- (2) Source curtailment. When an emergency is declared based on reaching criteria level for any pollutant, any person responsible for the operation of a source of air contaminant listed below shall take all required control actions for this emergency level.
- (a) When the source of air contaminant is fuel fired electric power generating facilities, maximum reduction of emissions shall be accomplished by utilization of fuels having lowest ash and sulfur content; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing; and diverting electric power generation to facilities outside of emergency area.
 - (b) When the source of air contaminant is fuel fired process steam generating facilities; maximum reduction of emissions shall be accomplished by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage or personal injury; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing and taking the action called for in the emergency plan.
 - (c) When the source of air contaminant is manufacturing industries including but not limited to the following classifications: primary metal industries, petroleum refining, chemical industries, mineral processing industries, grain industry, paper and allied products, surface coating, degreasing, nitric acid production, and fertilizer manufacturing; the source shall initiate action required to accomplish the following objectives:
 1. Elimination of air contaminants from manufacturing operations by ceasing, as expeditiously as possible, all operations which are not necessary for the prevention of injury to persons or damage to equipment; and curtailing, as expeditiously as possible all operations which are not necessary for the prevention of injury to persons or damage to equipment to the maximum extent possible without causing injury to persons or damage to equipment.
 2. Elimination of the emission of air contaminants by ceasing

trade waste disposal processes which emit solid particles, gases, vapors or malodorous substances; maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing; and maximum reduction of heat load demands consistent with subparagraph 1. of this paragraph.

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