

401 KAR 61:011. Existing municipal solid waste incinerators.

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120

STATUTORY AUTHORITY: KRS 224.10-100

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Environmental and Public Protection Cabinet to prescribe administrative regulations for the prevention, abatement, and control of air pollution. This administrative regulation provides standards of performance for existing municipal solid waste incinerators.

Section 1. Definitions. As used in this administrative regulation, all terms not defined in this section shall have the meaning given in 401 KAR 50:010.

(1) "Affected facility" means each municipal solid waste incinerator unit for which construction, modification, or reconstruction is commenced before December 20, 1989.

(2) "Municipal solid waste incinerator" or "municipal solid waste incinerator unit" or "MSWI" or "MSWI unit" means a device that combusts material, which if included in the waste stream, would be municipal solid waste. This includes but is not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved air or excess air), boilers (i.e., steam generating units), and furnaces (whether suspension-fired, grate-fired, mass-fired, or fluidized bed-fired).

(3) "Afterburner" means an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.

(4) "Biologicals" means a biological product used in the prevention or treatment of disease.

(5) "Bubbling fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material remains in the primary combustion zone.

(6) "Circulating fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.

(7) "Refuse-derived fuel co-fired incinerator" or "RDF co-fired incinerator" means an incinerator that is designed to fire refuse-derived fuel simultaneously with other fuels.

(8) "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding household and industrial wastes. Commercial solid waste includes waste from medical facilities, schools, and other institutions that is not medical waste.

(9) "Dioxin or furan" means total tetra-through octa-chlorinated dibenzo-p-dioxins and tetra-through octa-chlorinated dibenzofurans.

(10) "Field-erected" means assembled from components at a final site of operation.

(11) "Four (4) hour block average" means the average of all hourly emission rates when the affected facility is operating and combusting municipal solid waste measured over four (4) hour periods of from 12 midnight to 4 a.m., 4 a.m. to 8 a.m., 8 a.m. to 12 noon, 12 noon to 4 p.m., 4 p.m. to 8 p.m., 8 p.m. to 12 midnight.

(12) "Hazardous waste" has the meaning given it in KRS 224.01-010.

(13) "Household solid waste" means solid waste, including garbage and trash generated by single and multiple family residences, hotels, motels, bunkhouses, ranger stations, crew quarters, and recreational areas such as picnic areas, parks, and campgrounds.

(14) "Industrial waste" means a liquid, gaseous, or solid waste substance resulting from a process of industry, manufacture, trade, or business, or from the development, process, or recovery of a natural resource.

(15) "Large MSWI plant" means a MSWI plant with a MSWI plant capacity greater than 225 megagrams per day (250 tons per day) but less than or equal to 2,000 megagrams per day (2,200

tons per day) of municipal solid waste.

(16) "Mass burn refractory incinerator" means an incinerator that combusts waste in a refractory furnace.

(17) "Mass burn rotary waterwall incinerator" means an incinerator that combusts waste in a cylindrical rotary waterwall furnace.

(18) "Mass burn waterwall incinerator" means an incinerator that combusts waste in a conventional waterwall furnace.

(19) "Medical waste" means:

(a) Cultures and stocks of infectious agents, including specimen cultures collected from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, wastes from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures;

(b) Waste human blood and blood products such as serum, plasma, and other blood components;

(c) Pathological wastes, such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy;

(d) All discarded sharps, including but not limited to hypodermic needles, syringes, Pasteur pipettes, broken glass, scalpels, scalpel blades, glass vials, etc., used in patient care, embalming, autopsy, or which have come into contact with infectious agents during use in medical, research, or industrial laboratories;

(e) Carcasses and body parts of animals that were exposed to pathogens in research, in the production of biologicals, or in the in vivo testing of pharmaceuticals; and

(f) Other wastes as may be designated by a permit issued by the Division for Air Quality.

(20) "Modular excess air incinerator" means an incinerator that combusts waste and that is not field-erected and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

(21) "Modular starved air incinerator" means an incinerator that combusts waste and that is not field-erected and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

(22) "Multiple-chamber incinerator" means an incinerator consisting of at least two (2) refractory lined combustion chambers (primary and secondary) in series, physically separated by refractory walls, interconnected by gas passage ports or ducts.

(23) "Municipal solid waste" or "MSW" means household solid waste and commercial solid waste. Medical waste shall not be considered to be MSW, but may be regulated by other administrative regulations of the Division for Air Quality, including but not limited to 401 KAR 61:013, or Title 401, Chapter 63.

(24) "Particulate matter" means total particulate matter emitted from MSWI units.

(25) "Refuse-derived fuel" or "RDF" means a type of MSW produced by processing MSW through shredding and size classification. This shall include all classes of RDF including low density fluff RDF through densified RDF fuel pellets.

(26) "RDF spreader stoker" means a steam generating unit that combusts RDF in a semisuspension firing mode using air-fed distributors.

(27) "Regional MSWI plant" means a MSWI plant with a MSWI plant capacity greater than 2,000 megagrams per day (2,200 tons per day) of MSW.

(28) "Small MSWI plant" means a MSWI plant with a MSWI plant capacity of greater than 500 lb per hr but less than or equal to 225 megagrams per day (250 tons per day) of MSW.

(29) "Solid waste" has the meaning given it in KRS 224.01-010.

(30) "MSWI acid gases" means sulfur dioxide and hydrogen chloride gases emitted from MSWI units.

(31) "MSWI metals" means condensible metals emitted from MSWI units. For the purpose of this administrative regulation, particular matter shall serve as a surrogate for the measurement and control of MSWI metals.

(32) "MSWI organics" means organic compounds emitted from MSWI units and includes dioxins or furans. For the purpose of this administrative regulation, dioxin or furan shall serve as a surrogate for the measurement and control of MSWI organics.

(33) "MSWI plant" means one (1) or more MSWI units at the same location for which construction, modification, or reconstruction is commenced before December 20, 1989.

(34) "MSWI plant capacity" means the aggregate MSWI unit capacity of all MSWI units at a MSWI plant for which construction, modification, or reconstruction is commenced before December 20, 1989.

(35) "MSWI unit capacity" means the maximum designed charging rate of the waste for an individual MSWI unit.

(36) "Uncontrolled hydrogen chloride emission rate" means the hydrogen chloride emission rate that would occur from combustion of solid waste in the absence of hydrogen chloride emissions control.

(37) "Uncontrolled sulfur dioxide emission rate" means the sulfur dioxide emission rate that would occur from combustion of solid waste in the absence of sulfur dioxide emissions control.

Section 2. Applicability. (1) This administrative regulation shall apply to each affected facility which means each MSWI unit for which construction, modification, or reconstruction is commenced before December 20, 1989. RDF co-fired incinerators which combust less than or equal to twenty (20) percent RDF shall be exempt from this administrative regulation. Incinerators which combine and combust MSW and medical waste shall be regulated by 401 KAR 61:013.

(2) Physical or operational changes made to an existing MSWI unit to comply with this administrative regulation shall not be considered a modification or reconstruction and shall not subject an existing MSWI unit to 401 KAR 59:021.

(3) Owners or operators of MSWI plants with a plant capacity of 500 lb per hr or less shall be exempt from Sections 3 to 9 of this administrative regulation. However, these facilities shall comply with the following requirements:

(a) Emissions discharged into the atmosphere shall not exhibit greater than ten (10) percent opacity. Method 9, which has been filed by reference in 401 KAR 50:015, shall be used to determine compliance with the opacity standard.

(b) Other regulatory requirements including but not limited to 401 KAR 53:010 and Title 401, Chapter 63.

(4) Emission limitations or control requirements imposed by any other administrative regulation of the Division for Air Quality or the Division of Waste Management may impose more stringent requirements than those imposed by this administrative regulation.

(5) Siting criteria. No owner or operator of an affected facility subject to 401 KAR 47:030 shall construct or operate the affected facility in a manner which will violate the requirements of that administrative regulation.

Section 3. Emission Standards. (1) Standards for MSWI metals.

(a) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within either a small or large MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain particulate matter in excess of sixty-nine (69) milligrams per dry standard cubic meter (0.030 grains per dry standard cubic foot), corrected to seven (7) percent oxygen (dry basis).

(b) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a regional MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain particulate matter in excess of thirty-four (34) milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot), corrected to seven (7) percent oxygen (dry basis).

(c) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility shall cause or allow to be discharged into the atmosphere from that affected facility emissions which exhibit greater than ten (10) percent opacity (six (6) minute average).

(2) Standards for MSWI organics.

(a) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a small MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain dioxin or furan emissions in excess of seventy-five (75) nanograms per normal cubic meter (thirty (30) grains per billion standard cubic feet), corrected to seven (7) percent oxygen (dry basis).

(b) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a large MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain dioxin or furan emissions in excess of seventy-five (75) nanograms per normal cubic meter (thirty (30) grains per billion standard cubic feet), corrected to seven (7) percent oxygen (dry basis).

(c) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a regional MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain dioxin or furan emissions in excess of thirty (30) nanograms per normal cubic meter (fourteen (14) grains per billion standard cubic feet), corrected to seven (7) percent oxygen (dry basis).

(3) Standards for MSWI acid gases.

(a) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a large MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions which contain sulfur dioxide in excess of fifty (50) percent of the uncontrolled sulfur dioxide emission rate (fifty (50) percent reduction by weight) or thirty (30) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent.

(b) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a large MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions which contain hydrogen chloride in excess of fifty (50) percent of the uncontrolled hydrogen chloride emission rate (fifty (50) percent reduction by weight) or twenty-five (25) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent.

(c) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a regional MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions which contain sulfur dioxide in excess of fifteen (15) percent of the uncontrolled sulfur dioxide emission rate (eighty-five (85) percent reduction by weight) or thirty

(30) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent.

(d) On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility located within a regional MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions which contain hydrogen chloride in excess of five (5) percent of the uncontrolled hydrogen chloride emission rate (ninety-five (95) percent reduction by weight) or twenty-five (25) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent.

(4) Standards for carbon monoxide. On or after the date upon which the initial performance test is completed or is required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility shall cause or allow to be discharged into the atmosphere from that affected facility emissions which contain carbon monoxide in excess of the standards in Appendix A to this administrative regulation, for the indicated incinerator technology.

Section 4. MSWI Operating Practices. (1) The requirements for MSWI operating practices listed in 401 KAR 59:021, Section 8, shall apply to all MSWIs, except as provided in subsection (2) of this section.

(2) Owners or operators of affected facilities which have an incinerator without a secondary chamber but are equipped with an afterburner operated at a minimum temperature of 982 degrees Celsius (1800 degrees Fahrenheit) may choose to meet a more restrictive visible emission standard of zero percent opacity in lieu of meeting the secondary chamber requirement while combusting MSW. All other emission standards listed in Section 3 of this administrative regulation, and the operating practices in 401 KAR 59:021, Section 8, shall apply.

Section 5. Operator Certification and Training. The requirements for MSWI operator certification and training in 401 KAR 59:021, Section 9 shall apply to all MSWIs.

Section 6. Compliance and Performance Testing. On or before the completion of the compliance timetable in Section 9 of this administrative regulation for an affected facility and at other times as may be required by the cabinet, the owner or operator of an affected facility shall conduct performance tests according to 401 KAR 50:045 and this section and shall furnish the cabinet a written report of the results of the performance tests. For all existing MSWIs, the compliance and performance testing methods listed in 401 KAR 59:021, Section 10 for small plants shall apply, except that the length of time allowed for start-ups and shutdowns shall be three (3) hours.

Section 7. Reporting and Recordkeeping. The reporting and recordkeeping requirements in 401 KAR 59:021, Section 11 shall apply to all affected facilities.

Section 8. Compliance Timetable. (1) Except as provided in subsection (2) of this section, planning, awarding of contracts, and installation of equipment capable of attaining the level of the emission standards established in this administrative regulation shall be completed within three (3) years after November 15, 1990. Final compliance with this administrative regulation, except as provided in subsection (2) of this section shall be demonstrated no later than four (4) years after November 15, 1990.

(2) Planning, awarding of contracts, and installation of equipment and procedures capable of attaining the level materials separation specified in 401 KAR 59:021, Section 8 shall be completed by December 31, 1992. The initial demonstration of compliance with the materials separation provisions specified in 401 KAR 59:021, Section 10 shall be completed by December 31, 1994.

Section 9. Appendix A. Carbon Monoxide Standards for Municipal Solid Waste Incinerators.

CARBON MONOXIDE STANDARDS FOR MUNICIPAL SOLID WASTE INCINERATORS	
Municipal Solid Waste Incinerator Technology	Carbon Monoxide Emission Limit (ppmv)*
Mass burn waterwall	100
Mass burn refractory	100
Mass burn rotary water-wall	150
Modular starved air	50
Modular excess air	50
Refuse-derived fuel spreader stoker	150
Bubbling fluidized bed incinerator	100
Circulating fluidized bed incinerator	100
RDF co-fired incinerator	150
Other technologies	150
*Measured at the incinerator outlet in conjunction with a measurement of oxygen concentration, corrected to seven (7) percent oxygen (dry basis) using a four (4) hour block average.	

(17 Ky.R. 681; 1478; eff. 11-15-1990; TAm eff. 8-9-2007; Crt eff. 1-25-2019; TAm eff. 2-8-2019; TAm eff. 9-4-2019.)