401 KAR 59:023. New medical waste incinerators.

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 40 C.F.R. 60.13 (1990), 40 C.F.R. 60, Appendix A, Methods 1, 2, 3, 5, 6, 6A, 6C, 7, 7E, 9, 10 and 19 (1990), 40 C.F.R. 60, Appendix B, Performance Specifications 1, 2, 3, and 4 (1990)

STATUTORY AUTHORITY: KRS 224.10-100, 40 C.F.R. 60.13 (1990), 40 C.F.R. 60, Appendix A, Methods 1, 2, 3, 5, 6, 6A, 6C, 7, 7E, 9, 10 and 19 (1990), 40 C.F.R. 60, Appendix B, Performance Specifications 1, 2, 3, and 4 (1990)

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 for standards of performance for new medical waste incinerators.

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

(1) "Affected facility" means a device for which construction, modification, or reconstruction commenced on or after November 15, 1990, that combusts material which, if included in the waste stream, would be medical waste.

(2) "Acid gases" means sulfur dioxide and hydrogen chloride gases emitted from units.

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

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

(5) "Burnout" means the percent of matter completely burned in the primary chamber of an affected facility.

(6) "Chief facility operator" means the person in direct charge and control of the operation of an affected facility and who is responsible for daily on-site supervision, technical direction, management, and overall performance of the facility.

(7) "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.

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

(9) "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.

(10) "Contained landfill" has the meaning given it in 401 KAR 30:010.

(11) "Continuous emission monitoring system" or "CEMS" means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

(12) "Daily average" means the average of all hourly emission rates when the affected facility is operating and combusting medical waste, measured over a twenty-four (24) hour period between 12 midnight and the following midnight.

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

(14) "Ferrous metals" means metals and alloys containing iron. Ferrous metals include, but are not limited to, pieces of scrap metal and household appliances made of iron-containing metals, including stoves, refrigerators, air conditioners, and other appliances. Ferrous metals shall not include whole automobiles or other vehicles or vehicle bodies.

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

(16) "Four (4) hour block average" means the average of all hourly emission rates when the affected facility is operating and combusting medical 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.
(17) "Hazardous waste" has the meaning given it in KRS 224.01-010.
(18) "Household battery" means a dry cell battery.
(19) "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.
(20) "Industrial waste" means a liquid, gaseous, or solid waste substance resulting from a process of industry, manufacture, trade, or business, or from the development, processing, or recovery of a natural resource.
(21) "Mass burn refractory incinerator" means an incinerator that combusts waste in a refractory wall furnace.
(22) "Mass burn rotary waterwall incinerator" means an incinerator that combusts waste in a cylindrical rotary waterwall furnace.
(23) "Mass burn waterwall incinerator" means an incinerator that combusts waste in a conventional waterfall furnace.
(24) "Maximum unit load" means the maximum one (1) hour load achieved when compliance with all applicable administrative regulations is demonstrated or during a subsequent test demonstrating compliance at a higher unit load.
(25) "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, scalpel blades, scalpels, glass vials, etc., used in patient care, autopsy, embalming, 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.
(26) "Metals" means condensible metals emitted from units. For the purpose of this administrative regulation, particulate matter shall serve as a surrogate for the measurement and control of metals.
(27) "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.
(28) "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.
(29) "Municipal solid waste" or "MSW" means household solid waste and commercial solid waste. Medical waste shall not be considered to be MSW.

(30) "Municipal solid waste incinerator" or "MSWI" means a solid waste incinerator that combusts MSW exclusively.
(31) "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, and interconnected by gas passage ports or ducts.
(32) "Normal" means a volumetric measurement at thirty-two (32) degrees Fahrenheit and one (1) atmosphere.
(33) "Organics" means organic compounds emitted from 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 organics.
(34) "Plant" means one (1) or more units at the same location for which construction, modification, or reconstruction is commenced on or after November 15, 1990.
(35) "Plant capacity" means the aggregate unit capacity of all units at a plant for which construction, modification, or reconstruction is commenced on or after November 15, 1990.
(36) "Particulate matter" means total particulate matter emitted from affected facilities.
(37) "Particulate matter carry-over" means particulate matter which is passed from the primary chamber of an incinerator into the flue gas stream.
(38) "Processed MSW or refuse-derived fuel" or "processed MSW or RDF" means MSW or refuse-derived fuel that has been processed to separate materials for recovery prior to combustion in a solid waste incinerator. MSW or refuse-derived fuel is considered to be processed MSW or RDF if an overall forty (40) percent or greater reduction by weight (annual average) of MSW is achieved through the separation of recoverable materials. A maximum of fifteen (15) percent reduction (by weight) of the overall MSW shall be attributed to separation of yard waste. The forty (40) percent or greater overall reduction requirement may be achieved by on-site mechanical separation, on-site manual separation, off-site mechanical separation, off-site manual separation, or a curbside source reduction or materials separation (recycling) program, or a combination thereof.
(39) "Recoverable materials" means paper, paperboard, ferrous metals, nonferrous metals, glass, plastics, household batteries, and yard waste.
(40) "Refuse-derived fuel" or "RDF" means a type of MSW produced by processing MSW through shredding and size classification. This includes all classes of RDF including low density fluff RDF through densified RDF fuel pellets.
(41) "RDF spreader stoker" means a steam generating unit that combusts RDF in a semisuspension firing mode using air-fed distributors.
(42) "Same location" means the same or contiguous property that is under common ownership or control, including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or a combination thereof, including a municipality or other governmental unit, or a quasi-governmental authority (e.g., a public utility district or waste management district).
(43) "Shift supervisor" means the person in direct charge and control of the operation of an affected facility and who is responsible for on-site supervision, technical direction, management, and overall performance of the affected facility during an assigned shift.
(44) "Solid waste" has the meaning given it in KRS 224.01-010.
(45) "Standard" means a volumetric measurement at sixty-eight (68) degrees Fahrenheit and one (1) atmosphere.
(46) "Uncontrolled hydrogen chloride emission rate" means the hydrogen chloride emission rate that would occur from combustion of medical waste or other wastes combined with medical waste in the absence of hydrogen chloride emissions control.

(47) "Uncontrolled sulfur dioxide emission rate" means the sulfur dioxide emission rate that would occur from combustion of medical waste or other wastes combined with medical waste in the absence of sulfur dioxide emissions control.

(48) "Unit" means an affected facility including, but 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).

(49) "Unit capacity" means the maximum design charging rate of the waste for an individual unit.

(50) "Unit load" means the volume of steam produced, expressed in kilograms per hour (pounds per hour) of steam.

(51) "Unprocessed MSW or RDF" means MSW or RDF that has not been processed to separate materials for recovery prior to combustion or for which less than a forty (40) percent reduction by weight (annual average) of MSW is achieved as specified under processed MSW or RDF.

(52) "Vehicle batteries" means a wet lead-acid battery.

(53) "Waste" has the meaning given it in KRS 224.01-010.

(54) "Waste management district" has the meaning given it in KRS 224.01-010.

(55) "Yard waste" means vegetative matter removed as a result of outdoor maintenance practices from residential and commercial yards, municipal parks, gardens, golf courses, and other similar areas, and includes, but is not limited to, grass trimmings, tree branches, straw, and leaves.

Section 2. Applicability.

(1) This administrative regulation shall apply to each affected facility which means each unit for which construction, modification, or reconstruction is commenced on or after November 15, 1990. Affected facilities which combine and combust processed MSW, hazardous waste, or solid waste with medical waste shall comply with this administrative regulation. Affected facilities which combust only MSW shall comply with 401 KAR 59:021.

(2) The physical or operational changes made to an existing unit to comply with 401 KAR 61:013 shall not be considered a modification or reconstruction and shall not subject the existing affected facility to this administrative regulation.

(3) Emission limitations or control requirements imposed by another 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.

(4) The permitting exemption for small incinerators in 401 KAR 52:040, Section 2(1)(b), shall not apply to affected facilities.

(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 that will violate the requirements of that administrative regulation.

Section 3. Emission Standards.

(1) On and after the date on which the initial performance test is completed or required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility with a plant capacity of 500 pounds per hour or less shall cause or allow to be discharged into the atmosphere from the affected facility:

(a) Particulate matter in excess of 183 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) of exhaust gas, corrected to seven (7) percent oxygen (dry basis);

(b) Carbon monoxide in excess of 100 parts per million by volume corrected to seven (7) percent oxygen (dry basis);

(c) Visible air contaminants in excess of ten (10) percent opacity.

(2) On and after the date on which the initial performance test is completed or required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility with a plant capacity greater than 500 pounds per hour but less than or equal to 250 tons per day, shall cause or allow to be discharged into the atmosphere from the affected facility:

(a) Particulate matter emissions in excess of thirty-four (34) milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot of exhaust gas), corrected to seven (7) percent oxygen (dry basis);

(b) Carbon monoxide emissions in excess of 100 parts per million by volume corrected to seven (7) percent oxygen (dry basis);

(c) Hydrochloric acid (HC1) emissions in excess of ten (10) percent of the uncontrolled HC1 emission rate (ninety (90) percent reduction) (by weight) on an hourly basis or twenty-five (25) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent;

(d) Sulfur dioxide (SO_2) emissions in excess of fifteen (15) percent of the uncontrolled SO_2 emission rate (eighty-five (85) percent reduction) (by weight) on an hourly basis or thirty (30) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities which combust only medical waste;

(e) Visible air contaminants in excess of ten (10) percent opacity.

(3) On and after the date on which the initial performance test is completed or required to be completed by Section 6 of this administrative regulation, no owner or operator of an affected facility with a plant capacity greater than 250 tons per day shall cause or allow to be discharged into the atmosphere:

(a) Particulate matter emissions in excess of thirty-four (34) milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot) of exhaust gas, corrected to seven (7) percent oxygen (dry basis);

(b) Carbon monoxide emissions in excess of 100 parts per million by volume corrected to seven (7) percent oxygen (dry basis);

(c) Hydrochloric acid (HC1) emissions in excess of five (5) percent of the uncontrolled HC1 emission rate (ninety-five (95) percent reduction) (by weight) on an hourly basis or twenty-five (25) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent;

(d) Sulfur dioxide (SO_2) emissions in excess of fifteen (15) percent of the uncontrolled SO_2 emission rate (eighty-five (85) percent reduction) (by weight) on an hourly basis or thirty (30) parts per million by volume, corrected to seven (7) percent oxygen (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities which combust only medical waste;

(e) Visible air contaminants in excess of ten (10) percent opacity; or

(f) Nitrogen oxides emissions in excess of 120 parts per million by volume, corrected to seven (7) percent oxygen (dry basis).

Section 4. Standards for Operating Practices.

(1) No owner or operator of an affected facility that generates steam shall cause the facility to operate at a load level greater than 100 percent of the maximum unit load. An owner or operator of an affected facility who wishes to operate at a load level greater than the maximum unit load may do so by conducting all applicable compliance tests to establish a higher maximum unit load.

(2) No owner or operator of an affected facility shall burn medical waste except in a multiple-chamber incinerator with a solid hearth, or in a device found to be equally effective for the purpose of air contaminant control as determined by the cabinet.

(3) Temperature and residence time requirements for affected facilities equipped with a secondary chamber, while the affected facility is combusting medical waste:

(a) The incinerator secondary chamber shall be maintained at a temperature of 982 ± (plus or minus) 93 degrees Celsius (1800 ± (plus or minus) 200 degrees Fahrenheit);

(b) The minimum secondary chamber residence time shall be one and zero-tenths (1.0) seconds; and

(c) The incinerator shall have interlocks or other process control devices to prevent operation of the incinerator until the conditions in paragraphs (a) and (b) of this subsection and subsection (4) of this section are assured.

(4) No owner or operator of an affected facility other than a facility using a wet scrubber as a particulate matter control device shall allow the temperature of the flue gases entering the particulate matter control device inlet to exceed 149 degrees Celsius (300 degrees Fahrenheit) while the affected facility is combusting medical waste.

(5) Owners or operators of affected facilities that choose to combine and combust processed MSW or RDF, hazardous waste, or solid waste with medical waste in a unit shall comply with:

(a) The emission standards of Section 3 of this administrative regulation and operating practices of this section; and

(b) 401 KAR 59:021, Section 8 regarding material separation (percent reduction) for the portion of the waste that is MSW or RDF.

(6) Owners or operators of affected facilities may combust processed MSW or RDF, or solid waste which has not been combined with medical waste in a unit and shall comply with 401 KAR 59:021.

(7) Owners or operators of affected facilities shall cause ash from affected facilities to be tested to determine the toxicity of the ash, using tests required in Title 401, Chapter 31. Ash which is determined to be hazardous waste shall be disposed of according to the administrative regulations of the Division of Waste Management. Ash which is determined to not be hazardous waste shall be disposed of in a landfill permitted by the Division of Waste Management.

(8) Owners or operators of affected facilities that receive medical waste from generators that are noncontiguous to the incineration site shall comply with the operating requirements for contained landfills in 401 KAR 48:090, Section 2.

(9) Owners or operators of affected facilities shall comply with the design requirements for contained landfills in 401 KAR 48:070, Section 15.

Section 5. Operator Training.

(1) Each chief facility operator and shift supervisor of an affected facility shall successfully complete the U.S. EPA's "Hospital Incinerator Operator Training Course".

(2) No owner or operator of an affected facility shall cause or allow a unit to be operated unless the chief facility operator or shift supervisor who successfully completed the training course identified in subsection (1) of this section is on duty at the affected facility at all times during period of unit operation.

(3) The owner or operator of an affected facility shall develop and update on an annual basis a site-specific operation manual that shall at a minimum, address the following elements:

(a) Summary of the applicable standards under this administrative regulation;

(b) Description of basic combustion theory applicable to a unit;

(c) Procedures for receiving, handling, and feeding the waste;

(d) Unit start-up, shutdown, and malfunction procedures;

(e) Procedures for maintaining proper combustion air supply levels;

(f) Procedures for operating the unit within the standards established under this administrative regulation;

(g) Procedures for responding to periodic upset or off-specification conditions;
(h) Procedures for minimizing particulate matter carry-over;
(i) Procedures for monitoring burnout;
(j) Procedures for handling ash;
(k) Procedures for monitoring unit emissions; and
(l) Reporting and recordkeeping procedures.

(4) The owner or operator of an affected facility shall establish a program for reviewing the operating manual annually with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane or load handlers.

(5) The initial review of the operating manual, as specified under subsection (4) of this section, shall be conducted prior to assumption of responsibilities affecting unit operation by a person required to undergo training under subsection (4) of this section. Subsequent reviews of the manual shall be carried out annually by each person required to undergo training.

(6) The operating manual shall be kept in a readily accessible location for all persons required to undergo training under subsection (4) of this section. The operating manual and records of training shall be available for inspection by the cabinet upon request.

(7) The owner or operator of each affected facility shall maintain documentation to support compliance with this section. The information shall be made available upon request, and shall include, at a minimum, a description of the instruction given, the date of the instruction, the signature of the person receiving the instruction, and copies of the certificates issued to the chief facility operator and shift supervisor documenting successful completion of the training requirement in subsection (1) of this section.

Section 6. Compliance and Performance Testing. Within sixty (60) days after achieving the maximum production rate at which an affected facility will be operated, but not later than 180 days after initial start-up of the 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 shall furnish the cabinet a written report of the performance tests. This section shall apply at all times, except a period of one (1) hour for the start-up or shutdown of the affected facility and for a period not to exceed three (3) hours during the malfunction of an affected facility. Except as provided in 401 KAR 50:045, the following methods shall be used to determine compliance with Section 3 of this administrative regulation. 40 CFR 60.13, Methods 1, 2, 3, 5, 6, 6A, 6C, 7, 7E, 9, 10, and 19, and Performance Specifications 1, 2, 3, and 4 are adopted without change in Section 8 of this administrative regulation. Kentucky Method 26, Kentucky Specification 4A, and Kentucky Procedure 1 are incorporated by reference in Section 8 of this administrative regulation. For each performance test, an owner or operator may request that compliance be determined using carbon dioxide measurements corrected to an equivalent of seven (7) percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during each initial performance test.

(1) Metals. The following procedures and test methods shall be used to determine compliance with the standards for metals in Section 3 of this administrative regulation.

(a) Method 1 shall be used to select sampling sites and the number of traverse points. Method 2 shall be used for determining stack gas velocity and volumetric flow rates.

(b) Method 3 shall be used for gas analysis.

(c) Method 5 shall be used for determining compliance with the particulate matter emission standard. The minimum sample volume shall be one and seven-tenths (1.7) cubic meters (sixty (60) cubic feet). The temperature of the sample gas in the probe

and filter holder shall be no greater than 120 ± 14°C (248 ± 25°F). An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

(d) Both Method 9 and CEMS shall be used for determining compliance with the opacity standard. However, Method 9 results shall take precedence over CEMS data if concurrent readings occur.

(e) The owner or operator of a affected facility with a unit capacity greater than 500 pounds per hour that does not have a wet scrubber, shall install, calibrate, maintain, and operate a CEMS for measuring opacity and shall record the output of the system.

(f) Following the date the initial performance test for the mass emission standard for particulate matter is completed by this section, the owner or operator of an affected facility shall conduct a performance test for particulate matter on an annual basis (no more than twelve (12) calendar months following the previous compliance test).

(g) Following the date the initial performance test is completed or is required to be completed in this section, compliance with the opacity standard shall be determined by a six (6) minute average of the opacity readings obtained from the CEMS.

(2) Sulfur dioxide. The following procedures and test methods shall be used for determining compliance with the sulfur dioxide standards in Section 3 of this administrative regulation.

(a) The percentage reduction in the uncontrolled sulfur dioxide emissions ($\%P_{SO2}$) shall be computed using the formula in Appendix A of this administrative regulation.

(b) Methods 6, 6A, or 6C, and 19 shall be used for determining the sulfur dioxide emission rate.

(c) The sulfur dioxide performance test shall be conducted over twenty-four (24) consecutive unit operating hours at maximum unit load. Compliance with the sulfur dioxide standard shall be determined using a daily average.

(d) The owner or operator of an affected facility subject to Section 3(2)(d) or (3)(d) of this administrative regulation shall install, calibrate, maintain, and operate a CEMS for measuring sulfur dioxide emissions discharged to the atmosphere and shall record the output of the system.

(e) Following the date of the initial performance test or the date on which the initial performance test is required to be completed by this section, compliance with the sulfur dioxide standard shall be determined based on the arithmetic average of the hourly emission rates during each twenty-four (24) hour daily period measured between 12 midnight and the following midnight using CEMS inlet and outlet data, if compliance is based on a percentage reduction; or outlet data only if compliance is based on an emission limit.

(f) The one (1) hour averages required under paragraph (e) of this subsection shall be expressed in nanograms per hour (pounds per hour) and shall be used to calculate the daily average emission rates. The one (1) hour averages shall be calculated using the data points required in 40 CFR 60.13(h).

(g) For affected facilities which shall install CEMS, the span value of the CEMS at the inlet to the sulfur dioxide control device shall be 125 percent of the maximum estimated hourly uncontrolled sulfur dioxide emissions of the unit, and the span value of the CEMS at the outlet to the sulfur dioxide control device shall be fifty (50) percent of the maximum estimated hourly uncontrolled sulfur dioxide emissions of the unit.

(3) Hydrogen chloride. The following procedures and test methods shall be used for determining compliance with the hydrogen chloride standards under Section 3 of this administrative regulation.

(a) The percentage reduction in the uncontrolled hydrogen chloride emissions (P_{HC1}) shall be computed using the formula in Appendix B of this administrative regulation.

(b) Kentucky Method 26 shall be used for determining the hydrogen chloride emission rate.

(c) Following the date of the initial performance test or the date on which the initial performance test is required by this section, the owner or operator of an affected facility shall conduct a performance test for hydrogen chloride on an annual basis (no more than twelve (12) calendar months following the previous performance test).

(4) Nitrogen oxides. The following procedures and test methods shall be used to determine compliance with the nitrogen oxides standard under Section 3 of this administrative regulation.

(a) Methods 7 or 7E, and 19 shall be used for determining the nitrogen oxides emission rate.

(b) The owner or operator of an affected facility subject to the nitrogen oxides standard under Section 3 of this administrative regulation shall conduct an initial performance test for nitrogen oxides as required by this section. The initial performance test for nitrogen oxides shall be conducted over twenty-four (24) consecutive hours of unit operation to determine compliance with the nitrogen oxides standard. CEMS data shall be used if required by paragraph (d) of this subsection. Compliance with the nitrogen oxides standard shall be determined using a daily average.

(c) The owner or operator of an affected facility subject to the nitrogen oxides standard in Section 3 of this administrative regulation shall install, calibrate, maintain, and operate a CEMS for measuring nitrogen oxides discharged to the atmosphere and shall record the output of the system.

(d) Following the initial performance test or the date on which the initial performance test is required to be completed under this section, compliance with the emission limits for nitrogen oxides required under Section 3 of this administrative regulation shall be determined based on the arithmetic average of the hourly emission rates during each twenty-four (24) hour daily period measured between 12 midnight and the following midnight using CEMS data.

(e) The one (1) hour averages required under paragraph (d) of this subsection shall be expressed in parts per million volume (dry basis) and shall be used to calculate the daily average emission rates under Section 3 of this administrative regulation. The one (1) hour averages shall be calculated using the data points required under 40 CFR 60.13(h).

(5) Carbon monoxide. The following procedures shall be used for determining compliance with the carbon monoxide standards under Section 3 of this administrative regulation.

(a) Compliance with the carbon monoxide emission limits listed in Section 3 of this administrative regulation shall be determined using Method 10.

(b) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring carbon monoxide at the incinerator outlet and shall record the output of the system.

(c) Following the initial performance test of the date on which the initial performance test is required to be completed by this section, compliance with the emission limits for carbon monoxide required under Section 3 of this administrative regulation shall be determined based on the arithmetic average of the four (4) hour emission rates measured using CEMS data.

(6) The following procedures shall be used for determining compliance with the operating practices under Section 4 of this administrative regulation.

(a) The owner or operator of an affected facility which generates steam shall install, calibrate, maintain, and operate a steam flow meter, shall measure steam flow in kilograms per hour (pounds per hour) steam on a continuous basis, and shall record the output of the monitor. Steam flow shall be calculated in one (1) hour block averages.

(b) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system for measuring both secondary chamber temperature and the temperature of the flue gas stream at the inlet to the particulate matter air pollution control device and shall record the output of the device. Temperature shall be calculated in four (4) hour block averages.

(7) Additional CEMS or continuous monitoring systems requirements.

(a) CEMS and continuous monitoring data, if required, shall be used to determine compliance with emission standards and operating practice standards.

(b) At a minimum, CEMS or continuous monitoring system data, if required, shall be obtained for ninety (90) percent of the hours per day for ninety (90) percent of the days per month that the unit is operated and combusting medical waste.

(c) All valid CEMS or continuous monitoring system data, if required, shall be used in calculating emission rates and percent reductions even if the minimum CEMS or continuous monitoring system data requirements in paragraph (b) of this subsection are not met.

(d) The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(e) If emissions data from the CEMS or continuous monitoring systems are not obtained because of CEMS or monitoring system breakdown, repairs, calibration checks, or zero and span adjustments, emission data shall be obtained by using other monitoring systems as approved by the cabinet or Methods 6, 6A, 6C, 7, 7E, 10, and 19, as appropriate, to provide necessary emission data for a minimum of ninety (90) percent of the hours per day for ninety (90) percent of the days per month the unit is operated and combusting medical waste.

(f) CEMS shall conform to the applicable performance specifications in 40 CFR Part 60, Appendix B or Kentucky Specification 4A.

(g) The requirements of Kentucky Procedure 1 shall be met in the operation of CEMS.

Section 7. Reporting and Recordkeeping Requirements.

(1) The owner or operator of an affected facility subject to Sections 3 and 4 of this administrative regulation shall maintain records of the following information for each affected facility:

(a) Calendar date that data from performance tests, CEMS, or continuous monitoring systems were obtained.

(b) Emission rates and parameters measured using the units and time bases required for demonstrating compliance.

(c) Identification of the operating periods that the calculated sulfur dioxide, nitrogen oxides, or carbon monoxide emission rates, opacity, or the operating parameters exceeded the applicable standards, with reasons for the exceedances and a description of corrective actions taken.

(d) Identification of operating periods for which sulfur dioxide, nitrogen oxides, or carbon monoxide emissions, opacity, or operational data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(e) Identification of the times that sulfur dioxide, nitrogen oxides, or carbon monoxide emission, opacity, or operational data have been excluded from the calculation of average emission rates or parameters and the reasons for excluding the data.

(f) The results of daily sulfur dioxide, nitrogen oxides, and carbon monoxide, CEMS drift tests and accuracy assessments as required in Kentucky Procedure 1.

(g) The results of all applicable performance tests conducted to determine compliance with the mass particulate matter and hydrogen chloride standards.

(h) Beginning the month after the date of the initial start-up, the amount (by weight) of medical waste received and combusted on a monthly basis at the affected facility.

(2) If processed MSW or RDF is combusted in a unit, the recordkeeping requirements of 401 KAR 59:021, Section 11, regarding material separation shall apply for the portion of the waste that is processed MSW or RDF.

(3) The owner or operator of an affected facility shall submit the initial performance test data, the performance evaluation of the CEMS using the applicable performance specifications in 40 CFR, Part 60, Appendix B, and the maximum unit load within sixty (60) days of completing the test.

(4) The owner or operator of an affected facility shall submit quarterly compliance reports to the cabinet containing the information recorded under subsection (1) of this section and 401 KAR 59:005, Section 3(3) for all records required by this administrative regulation which are applicable to the facility. Both a printed report and computer tape or discs shall be furnished in the format specified by the cabinet. The reports shall be postmarked by the 30th day following the end of each calendar quarter.

(5) Records of CEMS, steam flow, and temperature data shall be maintained for at least two (2) years after date of recording and shall be made available for inspection upon request.

(6) Records showing the names of persons who have completed review of the operating manual and the documentation required by Section 5(7) of this administrative regulation, including the date of the initial review and all subsequent annual reviews, shall be maintained for at least two (2) years after date of manual review and shall be made available for inspection upon request.

(7) A description of the procedures employed for ensuring that unprocessed MSW or RDF is not combusted in an affected facility shall be maintained along with associated records to demonstrate use of the procedures, and shall be made available for inspection upon request.

(8) Documentation demonstrating that ash disposal from an affected facility complies with Section 4(7) of this administrative regulation shall be submitted to the Division of Waste Management in the frequency required by the Division of Waste Management.

Section 8. Reference Materials.

(1) The subject matter of this administrative regulation relating to reference methods, CEMS, and testing shall be governed by 40 CFR 60.13 (1990), 40 CFR 60, Appendix A, Methods 1, 2, 3, 5, 6, 6A, 6C, 7, 7E, 9, 10, and 19, and 40 CFR 60, Appendix B, Performance Specifications 1, 2, 3, and 4.

(2) Incorporation by Reference. The following documents from the Kentucky Division for Air Quality are hereby incorporated by reference:

(a) Kentucky Method 26, effective July 1990;

(b) Kentucky Specification 4A, effective July 1990; and

(c) Kentucky Procedure 1, effective July 1990.

(3) The documents incorporated by reference in subsection (2) of this section are available for public inspection and copying at the following main and regional offices of the Kentucky Division for Air Quality during the normal working hours of 8 a.m. to 4:30 p.m., local time.

(a) Kentucky Division for Air Quality, 300 Sower Boulevard, Frankfort, Kentucky 40601, (502) 573-3382;

(b) Ashland Regional Office, 1550 Wolohan Drive, Suite 1, Ashland, Kentucky 41102-8942, (606) 929-5285;

(c) Bowling Green Regional Office, 1508 Westen Avenue, Bowling Green, Kentucky 42104, (270) 746-7475;

(d) Florence Regional Office, 8020 Veterans Memorial Drive, Suite 110, Florence, Kentucky 41042, (859) 525-4923;
(e) Hazard Regional Office, 233 Birch Street, Suite 2, Hazard, Kentucky 41701, (606) 435-6022;
(f) London Regional Office, 875 South Main Street, London, Kentucky 40741, (606) 330-2080;
(g) Owensboro Regional Office, 3032 Alvey Park Drive West, Suite 700, Owensboro, Kentucky 42303, (270) 687-7304; and
(h) Paducah Regional Office, 130 Eagle Nest Drive, Paducah, Kentucky 42003-9435, (270) 898-8468.

Section 9. Appendix A. Formula for Percentage Reduction in Uncontrolled Sulfur Dioxide Emissions.

FORMULA FOR PERCENTAGE REDUCTION IN UNCONTROLLED SULFUR DIOXIDE EMISSIONS

$$\%P_{SO2} = \frac{(E_i - E_o)}{E_i} \times 100$$

where:
%PSO2 is the percentage reduction in uncontrolled sulfur dioxide emissions.
Ei is the daily uncontrolled sulfur dioxide emission rate.
Eo is the daily sulfur dioxide emission rate measured at the outlet of the acid gas control device.

Section 10. Appendix B. Formula for Percentage Reduction in Uncontrolled Hydrogen Chloride Emissions.

FORMULA FOR PERCENTAGE REDUCTION IN UNCONTROLLED HYDROGEN CHLORIDE EMISSIONS

$$\%P_{HC1} = \frac{(E_i - E_o)}{E_i} \times 100$$

where:
%PHC1 is the percentage reduction in uncontrolled hydrogen chloride emissions.
Ei is the daily uncontrolled hydrogen chloride emission rate.
Eo is the daily hydrogen chloride emission rate measured at the outlet of the acid gas control device.

(17 Ky.R. 662; 1460; 1982; eff. 11-15-1990; TAm eff. 8-9-2007; TAm eff. 5-20-2010; TAm eff. 7-8-2016; Crt eff. 11-21-2018; TAm eff. 2-14-2019; TAm eff. 9-4-2019.)