

REGULATION 7.78 Standards of Performance for New Medical Waste Incinerators

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS 77 Chapter 77 Air Pollution Control

Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new medical waste incinerators.

SECTION 1 Applicability

- 1.1 This regulation applies to each affected facility, which means each unit for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation. Affected facilities that combine and combust MSW, solid waste, or hazardous waste with medical waste shall be subject to this regulation. Affected facilities that combust only MSW shall be subject to Regulation 7.76 *Standards of Performance for New Municipal Solid Waste Incinerators*.
- 1.2 The physical or operational changes made to an existing unit to comply with Regulation 6.41 shall be considered a modification or reconstruction and shall not subject the existing unit to this regulation.
- 1.3 Emission limitations or control requirements established by another regulation or the Cabinet may be more stringent than those in this regulation. The more stringent requirements shall govern.

SECTION 2 Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given them in Regulation 1.02 *Definitions*.

- 2.1 "Acid gases" means sulfur dioxide and hydrogen chlorine gases emitted from units.
- 2.2 "Affected facility" means a device for which construction, modification, or reconstruction commenced on or after the effective date of this regulation, that combusts material which, included in the waste stream, would be medical waste.
- 2.3 "Afterburner" means an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.
- 2.4 "ASME" means the American Society of Mechanical Engineers.
- 2.5 "Biologicals" means a biological product used in prevention or treatment of disease.
- 2.6 "Bubbling fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material remains in the primary combustion zone.
- 2.7 "Burnout" means the percent of matter completely burned in the primary chamber of an affected facility.
- 2.8 "Chief facility operator" means the person in direct charge and control of the operation of an affected facility who is responsible for daily on-site supervision, technical direction, management, and overall performance of the facility.

- 2.9 "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.
- 2.10 "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.
- 2.11 "Continuous emission monitoring system" (CEMS) means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.
- 2.12 "Daily average" means the average of all hourly emission rates when the affected facility is operating and firing municipal solid waste, measured over a 24-hour period between 12:00 midnight and the following midnight.
- 2.13 "Dioxin or furans" means total tetra- through octa-chlorinated dibenzo-p-dioxins and tetra-through octa-chlorinated dibenzofurans.
- 2.14 "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.
- 2.15 "Field-erected" means assembled from components at a final site of operations.
- 2.16 "Four-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-hour periods of from 12:00 midnight to 4:00 a.m., 4:00 a.m. to 8:00 a.m., 8:00 a.m. to 12:00 noon, 12:00 noon to 4:00 p.m., 4:00 p.m. to 8:00 p.m., and 8:00 p.m. to 12:00 midnight.
- 2.17 "Hazardous waste" means any discarded material or material intended to be discarded or substance or combination of such substances intended to be discarded in any form that, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
- 2.18 "Household battery" means a dry cell battery.
- 2.19 "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.
- 2.21 "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.
- 2.22 "Large MSWI plant" means an MSWI plant with a capacity greater than 225 megagrams (250 tons) per day of municipal waste.
- 2.23 "Mass burn refractory incinerator" means an incinerator that combusts waste in a refractory wall furnace.
- 2.24 "Mass burn rotary waterwall incinerator" means an incinerator that combusts waste in a cylindrical rotary waterwall furnace.
- 2.25 "Mass burn waterwall incinerator" means an incinerator that combusts waste in a conventional

- waterwall furnace.
- 2.26 "Maximum unit load" means the maximum 1-hour load achieved when compliance with all applicable regulations is demonstrated or during a subsequent test demonstrating compliance with a higher unit load.
- 2.27 "Medical waste" means:
- 2.27.1 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, waste from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures,
- 2.27.2 Waste human blood and blood products such as serum, plasma, and other blood components,
- 2.27.3 Pathological wastes, such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy,
- 2.27.4 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, autopsy, or embalming or that have come into contact with infectious agents during use in medical, research, or industrial laboratories,
- 2.27.5 Carcasses and body parts of animals that were exposed to pathogens in research, in production of biologicals, or in the in vivo testing of pharmaceuticals, and
- 2.27.6 Other wastes as may be designated by a permit issued by the District.
- 2.28 "Metals" means condensable metals emitted from units. For the purpose of this regulation, particulate matter shall serve as a surrogate for the measurement and controls of metals.
- 2.29 "Modular excess air incinerator" means an incinerator that combusts waste, 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.
- 2.30 "Modular starved air incinerator" means an incinerator that combusts waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.
- 2.31 "Municipal solid waste" or "MSW" means household solid waste and commercial solid waste. Medical waste shall not be considered to be MSW and is regulated by Regulation 6.41 or 7.78.
- 2.32 "Municipal solid waste incinerator" (MSWI) or "municipal solid waste incinerator unit" (MSWI unit) means a device that combusts material that, if included in the waste stream, would be municipal 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).
- 2.33 "Multiple-chamber incinerator" means an incinerator consisting of at least 2 refractory-lined combustion chambers (primary and secondary) in series, physically separated by refractory walls and interconnected by gas passage ports or ducts.
- 2.34 "Normal" means a volumetric measurement at 32°F and 1 atmosphere.
- 2.35 "Organics" means organic compounds emitted from units and includes dioxins or furans. For the purpose of this regulation, dioxin or furan shall serve as a surrogate for the measurement

- and control of organics.
- 2.36 "Particulate matter" means total particulate matter emitted from affected facilities.
- 2.37 "Particulate matter carryover" means particulate matter that is passed from the primary chamber of an incinerator into the flue gas stream.
- 2.38 "Plant" means 1 or more units at the same location for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation.
- 2.39 "Plant capacity" means the aggregate unit capacity of all units at a plant for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation.
- 2.40 "Processed municipal solid waste or refuse-derived fuel" or "processed MSW or RDF" means MSW or RDF that has been processed to separate materials for recovery prior to combustion in an MSWI unit. MSW or RDF is considered to be processed MSW or RDF if an overall 40% or greater reduction by weight (annual average) of MSW is achieved through separation of recoverable materials. A maximum of 15% reduction by weight of overall MSW shall be attributed to separation of yard waste. The 40% 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, a curb side source reduction or a materials separation (recycling) program, or a combination of any of these.
- 2.41 "Recoverable materials" means paper, paperboard, ferrous metals, nonferrous metals, glass, plastics, household batteries, and yard waste.
- 2.42 "Refuse-derived fuel" (RDF) means a type of MSW produced by processing MSW through shredding and size classification. This includes all classes of RDF from low density fluff RDF through densified RDF fuel pellets.
- 2.43 "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.
- 2.44 "RDF spreader stoker" means a steam generating unit that combusts RDF in a semi-suspension firing mode using air-fed distributors.
- 2.45 "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 of these, including a municipality or other governmental unit or a quasi-governmental authority (e.g., a public utility district or waste management district).
- 2.46 "Shift supervisor" means the person in direct charge and control of the operation of an affected facility who is responsible for on-site supervision, technical direction, management, and overall performance of the affected facility during an assigned shift.
- 2.47 "Small MSWI plant" means an MSWI plant with an MSWI plant capacity of greater than 500 pounds per hour but less than or equal to 225 megagrams per day (250 tons per day) of municipal solid waste.
- 2.48 "Solid waste" means any garbage, refuse, sludge, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining (excluding coal mining waste, coal mining by-products, refuse, and overburden), agricultural operations, and community activities, but does not include those materials, including, but not limited to, sand, soil, rock, gravel, or bridge debris extracted as a part of

- a public road construction project funded wholly or in part with state funds, recovered material, special waste as designated by KRS 224.50-760, solid or dissolved material in domestic sewage, manure, crops, crop residue, or a combination of these that is placed on the soil for return to the soil as fertilizers or soil conditioners, or solid or dissolved material in irrigation return flows or industrial discharges that are point sources subject to permits under the Federal Water Pollution Control Act (86 Stat. 880) Section 402, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (68 Stat. 923).
- 2.49 "Standard" means a volumetric measurement at 68°F and 1 atmosphere.
- 2.50 "Uncontrolled hydrogen chloride emission rate" means the HCl emission rate that would occur from the combustion of medical waste in the absence of HCl emissions control.
- 2.51 "Uncontrolled sulfur dioxide emission rate" means the SO₂ emission rate that would occur from the combustion of medical waste in the absence of SO₂ emissions control.
- 2.52 "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).
- 2.53 "Unit capacity" means the maximum designed charging rate of the waste for an individual unit.
- 2.54 "Unit load" means the volume of steam produced, expressed in kilograms per hour (pounds per hour) of steam.
- 2.55 "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 40% reduction by weight (annual average) of MSW is achieved as specified under processed MSW or RDF.
- 2.56 "Vehicle battery" means a wet lead-acid battery.
- 2.57 "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 3 Emission Standards

- 3.1 On or after the date on which the initial performance test is completed or required to be completed by Section 6, no owner or operator of an affected facility with a plant capacity of 500 pounds per hour or less shall cause to be discharged into the atmosphere from the affected facility:
- 3.1.1 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 7% O₂ (dry basis),
- 3.1.2 Carbon monoxide in excess of 100 parts per million by volume corrected to 7% O₂ (dry basis), or
- 3.1.3 Visible air contaminants in excess of 10% opacity.
- 3.2 On or after the date on which the initial performance test is completed or required to be completed by Section 6, 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:
- 3.2.1 Particulate matter in excess of 34 milligrams per dry standard cubic meter (0.015 grains

- per dry standard cubic foot) of exhaust gas, corrected to 7% O₂ (dry basis),
- 3.2.2 Carbon monoxide emissions in excess of 100 parts per million by volume corrected to 7% O₂ (dry basis),
- 3.2.3 Hydrochloric acid emissions in excess of 10% of the uncontrolled HCl emission rate (90% reduction by weight) on an hourly basis or 25 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent,
- 3.2.4 Sulfur dioxide emissions in excess of 15% of the uncontrolled SO₂ emission rate (85% reduction by weight) on an hourly basis or 30 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities that combust only medical waste, or
- 3.2.5 Visible air contaminants in excess of 10% opacity.
- 3.3 On or after the date on which the initial performance test is completed or required to be completed by Section 6, 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:
 - 3.3.1 Particulate matter emissions in excess of 34 milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot) of exhaust gas corrected to 7% O₂ (dry basis),
 - 3.3.2 Carbon monoxide emissions in excess of 100 parts per million by volume corrected to 7% O₂ (dry basis),
 - 3.3.3 Hydrochloric acid emissions in excess of 5% of the uncontrolled HCl emission rate (95% reduction by weight) on an hourly basis or 25 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent,
 - 3.3.4 Sulfur dioxide emissions in excess of 15% of the uncontrolled SO₂ emission rate (85% reduction by weight) on an hourly basis or 30 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities that combust only medical waste,
 - 3.3.5 Visible air contaminants in excess of 10% opacity, or
 - 3.3.6 Nitrogen oxides emissions in excess of 120 parts per million by volume, corrected to 7% O₂ (dry basis).

SECTION 4 Standards for Operating Practices

The requirements for unit operating practices listed in this Section apply to all units.

- 4.1 No owner or operator of an affected facility that generates steam shall cause the facility to operate at a load level greater than 100% of the maximum unit load. An owner or operator of an affected facility who wishes to operate at a load greater than the maximum unit load may do so by conducting all applicable compliance tests to establish a higher maximum unit load.
- 4.2 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 District.
- 4.3 Temperature and residence time requirements for affected facilities, equipped with a secondary chamber, while the affected facility is combusting medical waste are as follows:
 - 4.3.1 The incinerator secondary chamber shall be maintained at a temperature of $982 \pm 93^{\circ}\text{C}$ ($1800 \pm 200^{\circ}\text{F}$),
 - 4.3.2 The minimum secondary chamber residence time shall be 1 second, and

- 4.3.3 The incinerator shall have interlocks or other process control devices to prevent operation of the incinerator until the conditions in sections 4.3.1, 4.3.2, and 4.4 are assured.
- 4.4 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°C (300°F) while the affected facility is combusting medical waste.
- 4.5 Owners or operators of affected facilities that choose to combine and combust MSW or RDF, hazardous waste, or solid waste with medical waste in a unit shall comply with:
 - 4.5.1 The emission standards of Section 3 and operating practices of this Section, and
 - 4.5.2 If the owner or operator has applied for and has been issued a "materials separation or combustion permit" by the State, then separated materials covered under the materials separation or combustion permit may be combusted in the affected facility and may be credited toward the overall 40% materials separation requirement for processed MSW or RDF.
- 4.6 Owners or operators of affected facilities may combust processed MSW or RDF or solid waste that has not been combined with medical waste in a unit, and shall comply with Regulation 7.76.
- 4.7 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 401 KAR Chapter 31. Ash that is determined to be hazardous waste shall be disposed of according to the regulations of the Division of Waste Management. Ash that is determined to not be hazardous waste shall be disposed of in a landfill permitted by the Division of Waste Management.
- 4.8 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; i.e., shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous waste as defined in 401 KAR Chapter 31 and polychlorinated biphenyls (PCBs) as defined in 40 CFR Section 761. This program shall include, at a minimum:
 - 4.8.1 Random inspections of incoming waste,
 - 4.8.2 Inspection of suspicious waste,
 - 4.8.3 Records of inspections,
 - 4.8.4 Training of facility personnel to recognize regulated hazardous waste,
 - 4.8.5 Procedures for notifying the proper authorities and the District if a regulated hazardous waste is discovered at the facility and isolating this waste from the waste stream,
 - 4.8.6 Employee safety, health, training, and equipment to be used in inspections, and
 - 4.8.7 The owner or operator shall have a program approved by Kentucky Division of Waste Management to inspect all waste entering the source for combustion. This program to exclude hazardous waste shall include:
 - 4.8.7.1 Random inspections in time, but uniformly distributed, of all contributing waste sources based on the volume received from each,
 - 4.8.7.2 Identification data concerning the hauler on the formal operating inspection record:
 - 4.8.7.2.1 The name of the driver,
 - 4.8.7.2.2 The name of the hauler,

- 4.8.7.2.3 The address of the hauler,
- 4.8.7.2.4 The name of the source of the waste,
- 4.8.7.2.5 The address of the source of the waste,
- 4.8.7.2.6 The weight and volume of the waste delivered,
- 4.8.7.2.7 The waste characteristics, and
- 4.8.7.2.8 The isolation of suspect waste and notification of authorities as required by section 4.8.5, and
- 4.8.7.3 A record, maintained by the owner or operator, of the inspections in accordance with the approved record keeping requirements of the Kentucky Division of Waste Management.

SECTION 5 Operator Training

- 5.1 Each chief facility operator and shift supervisor of an affected facility shall successfully complete EPA's "Hospital Incinerator Operator Training Course."
- 5.2 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 has successfully completed the training course identified in section 5.1, is on duty at the affected facility at all times during periods of unit operation.
- 5.3 The owner or operator of an affected facility shall develop, update on an annual basis, and provide the District with 1 copy of, a site-specific operations manual that shall, at a minimum, address the following elements:
 - 5.3.1 Summary of the applicable standards under this regulation,
 - 5.3.2 Description of basic combustion theory applicable to a unit,
 - 5.3.3 Procedures for receiving, handling, and feeding the waste,
 - 5.3.4 Unit start-up, shutdown, and malfunction procedures,
 - 5.3.5 Procedures for maintaining proper combustion air supply levels,
 - 5.3.6 Procedures for operating the unit within the standards established under this regulation,
 - 5.3.7 Procedures for responding to periodic upset or off-specification conditions,
 - 5.3.8 Procedures for minimizing particulate matter carry-over,
 - 5.3.9 Procedures for monitoring burnout,
 - 5.3.10 Procedures for handling ash,
 - 5.3.11 Procedures for monitoring unit emissions, and
 - 5.3.12 Reporting and recordkeeping procedures.
- 5.4 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.
- 5.5 The initial review of the operating manual, as specified under section 5.4, shall be conducted prior to the assumption of responsibilities affecting unit operation by a person required to undergo training under section 5.1. Subsequent reviews of the manual shall be carried out annually by each person required to undergo training.
- 5.6 The operating manual shall be kept in a readily accessible location for all persons required to undergo training under section 5.1. The operating manual and records of training shall be available for inspection by District personnel upon request.

- 5.7 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 required in section 5.1.

SECTION 6 Compliance and Performance Testing

Within 60 days after achieving the maximum production rate at which an affected facility will be operated, but no later than 180 days after initial start-up of the affected facility, and at other times as may be required by the District, the owner or operator of an affected facility shall conduct performance tests according to Regulation 1.04 *Performance Tests* and shall furnish the District a written report of the performance tests. This Section shall apply at all times except for a period of 1 hour for start-up or shutdown of the affected facility and for a period not to exceed 3 hours during the malfunction of an affected facility. Except as provided in Regulation 1.04, the following methods shall be used to determine compliance with Section 3. 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 Regulation 1.15 *Version of Federal Regulations Incorporated by Reference*. Kentucky Methods 23 and 26, Kentucky Specification 4A, and Kentucky Procedure 1 are incorporated by reference. For each performance test, an owner or operator may request that compliance be determined using CO₂ measurements corrected to an equivalent of 7% O₂. The relationship between O₂ and CO₂ levels for the affected facility shall be established during each initial performance test.

- 6.1 Metals. The following procedures and test methods shall be used to determine compliance with the standards for metal in Section 3:
- 6.1.1 Method 1 shall be used to select sampling sites and the number of traverse points.
 - 6.1.2 Method 2 shall be used for determining stack gas velocity and volumetric flow rates.
 - 6.1.3 Method 3 shall be used for gas analysis.
 - 6.1.4 Method 5 shall be used for determining compliance with particulate matter emission standards. The minimum sample volume shall be 1.7 cubic meters (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.
 - 6.1.5 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.
 - 6.1.6 The owner or operator of an 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.
 - 6.1.7 Following the date the initial performance test for the mass emission standard for particulate matter is completed to comply with this regulation, the owner or operator of an affected facility shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous compliance test).
 - 6.1.8 Following the date the initial performance test is completed or is required to be completed in this regulation, compliance with the opacity standard shall be determined by 6-minute

average opacity readings obtained from CEMS.

6.2 Sulfur dioxide. The following procedures and test methods shall be used for determining compliance with the SO₂ standards in Section 3:

6.2.1 The percentage reduction in the uncontrolled SO₂ emissions (% PSO₂) shall be computed using the following formula:

$$\% PSO_2 = \frac{(E_i - E_o) \times 100}{E_i}$$

where:

- % PSO₂ = the percentage reduction in uncontrolled SO₂ emissions.
- E_i = the daily uncontrolled SO₂ emission rate.
- E_o = the daily SO₂ rate measured at the outlet of the acid gas control device.

6.2.2 Methods 6, 6A or 6C, and 19 shall be used for determining the SO₂ emission rate.

6.2.3 The SO₂ performance test shall be conducted over 24 consecutive unit operating hours at maximum unit load. Compliance with the SO₂ standard shall be determined using a daily average.

6.2.4 The owner or operator of an affected facility subject to section 3.2.4 or 3.3.4 shall install, calibrate, maintain, and operate a CEMS for measuring SO₂ emissions discharged to the atmosphere and shall record the output of the system.

6.2.5 Following the date of the initial performance test or the date on which the initial performance test is required to be completed by this regulation, compliance with the SO₂ standard shall be determined based on the arithmetic average of the hourly emission rates during each 24-hour daily period measured between 12:00 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.

6.2.6 The 1-hour average required under section 6.2.5 shall be expressed in nanograms per hour (pounds per hour) and shall be used to calculate the daily average emission rates. The 1-hour averages shall be calculated using the data points required in 40 CFR §60.13(h).

6.2.7 For affected facilities that shall install CEMS, the span value of the CEMS at the inlet to the SO₂ control device shall be 125% of the maximum estimated hourly uncontrolled SO₂ emissions of the unit, and the span value of the CEMS at the outlet to the SO₂ control device shall be 50% of the maximum estimated hourly uncontrolled SO₂ emissions of the unit.

6.3 Hydrogen chloride. The following procedures and test methods shall be used for determining compliance with the HCl standards under Section 3:

6.3.1 The percentage reduction in uncontrolled hydrogen chloride emissions (% PHCl) shall be computed using the following formula:

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

where:

- % PHCl = the percentage reduction in uncontrolled HCl emissions.

- E_i = the daily uncontrolled HCl emission rate.
- E_o = the daily HCl rate measured at the outlet of the acid gas control device.

- 6.3.2 Kentucky Method 26 shall be used for determining the HCl emission rate.
- 6.3.3 Following the date of the initial performance test or the date on which the initial performance test is required by this regulation, the owner or operator of an affected facility shall conduct a performance test for HCl on an annual basis (no more than 12 calendar months following the previous performance test).
- 6.4 Nitrogen oxides. The following procedures and test methods shall be used to determine compliance with the NO_x standard under Section 3.
 - 6.4.1 EPA Methods 7 or 7E, and 19 shall be used for determining the NO_x emission rate.
 - 6.4.2 The owner or operator of an affected facility subject to the NO_x standard under Section 3 shall conduct an initial performance test for NO_x as required by this Section. The initial performance test for NO_x shall be conducted over 24 consecutive hours of unit operation to determine compliance with the NO_x standard. CEMS data shall be used if required by section 6.4.4. Compliance with the NO_x standard shall be determined using a daily basis.
 - 6.4.3 The owner or operator of an affected facility subject to the NO_x standard in Section 3 shall install, calibrate, maintain, and operate a CEMS for measuring NO_x discharged to the atmosphere and shall record the output of the system.
 - 6.4.4 Following the initial performance test or the date on which the initial performance test is required to be completed under this regulation, compliance with the emission limits for NO_x required under Section 3 shall be determined based on the arithmetic average of the hourly emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using CEMS data.
 - 6.4.5 The 1-hour average required under section 6.4.4 shall be expressed in parts per million volume (dry basis) and shall be used to calculate the daily average emission rates under Section 3. The 1-hour averages shall be calculated using the data points required under 40 CFR §60.13.
- 6.5 Carbon monoxide. The following procedures shall be used for determining compliance with the CO standards listed in Section 3:
 - 6.5.1 Compliance with the CO emission limits listed in Section 3 shall be determined using Method 10.
 - 6.5.2 The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring CO at the incinerator outlet and shall record the output of the system.
 - 6.5.3 Following the initial performance test or the date on which the initial performance test is required to be completed by this regulation, compliance with the emission limits for CO required under Section 3 shall be determined based on the arithmetic average of the 4-hour emission rates measured using CEMS data.
- 6.6 The following procedures shall be used for determining compliance with the operating practices under Section 4:
 - 6.6.1 The owner or operator of an affected facility that 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 1-hour block averages.
- 6.6.2 The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the primary chamber temperature, the 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 4-hour block averages.
- 6.7 Additional CEMS requirements:
- 6.7.1 CEMS data, if required, shall be used to determine compliance with emission standards and operating practice standards.
- 6.7.2 At a minimum, CEMS data, if required, shall be obtained for 90% of the hours per day for 90% of the days per month that the unit is operated and combusting medical waste.
- 6.7.3 All valid CEMS 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 section 6.7.2 are not met.
- 6.7.4. The procedures under 40 CFR §60.13 shall be followed for installation, evaluation, and operation of the CEMS.
- 6.7.5 If emission data from the CEMS or continuous monitoring systems are not obtained because of CEMS or continuous 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 District or Methods 6, 6A, 6C, 7, 7E, 10, and 19, as appropriate, to provide necessary emission data for a minimum of 90% of the hours per day for 90% of the days per month the unit is operated and combusting medical waste.
- 6.7.6 CEMS shall conform to the applicable performance specifications in 40 CFR Part 60 Appendix B.
- 6.7.7 The requirements of 40 CFR Part 60 Appendix F shall be met in the operation of CEMS.
- 6.7.8 The owner or operator shall install and maintain an electronic data acquisition system that shall monitor and record the following parameters of proper unit operation:
- 6.7.8.1 Waste feed rate,
- 6.7.8.2 Ph values in the packed scrubber solution, if applicable, and
- 6.7.8.3 Time and duration of emergency by-pass of any emission control device.
- 6.7.9 The owner or operator shall maintain, operate, calibrate, and audit a data logging system and telemetry system compatible with the District's electronic data retrieval monitoring system. If the source is required to install and maintain any CEM system, the owner or operator shall supply, at its expense, a dedicated telephone access to the data logger.

SECTION 7 Reporting and Recordkeeping Requirements

- 7.1 The owner or operator of an affected facility subject to Sections 3 and 4 shall maintain records of the following information for each affected facility:
- 7.1.1 Calendar date that the data from performance tests or CEMS was obtained,
- 7.1.2 Emission rates and parameters measured using the units and time bases required for demonstrating compliance,
- 7.1.3 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,
- 7.1.4 Identification of operating periods for which SO₂, NO_x, or CO emissions, opacity, or operational data have not been obtained, including reasons for not obtaining sufficient data and a description of the corrective actions taken,
- 7.1.5 Identification of the times that SO₂, NO_x, or CO emissions, opacity, or operational data have been excluded from the calculation of average emission rates or parameters and the reasons for excluding the data,
- 7.1.6 The results of daily SO₂, NO_x, or CO CEMS drift tests and accuracy assessments as required in 40 CFR Part 60 Appendix F,
- 7.1.7 The results of all applicable performance tests conducted to determine compliance with the mass particulate matter and hydrogen chloride standards, and
- 7.1.8 Beginning the month after the date of the initial compliance tests, the amount (by weight) of medical waste received and combusted on a monthly basis at the affected facility.
- 7.2 If processed MSW or RDF is combusted in a unit, the recordkeeping requirements of Regulation 7.76 regarding material separation shall apply for the portion of the waste that is processed MSW or RDF.
- 7.3 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 60 days of completing the tests but no later than 180 days after the initial start up.
- 7.4 The owner or operator of an affected facility shall submit quarterly compliance reports to the District containing the information recorded under Section 7 for all records required by this regulation that are applicable to the facility.
 - 7.4.1 The owner or operator required to install a CEMS shall submit for each calendar quarter a written report of excess emissions (as defined in this regulation) to the District, in a printed report and a computer disc, formatted as specified by the District. All quarterly reports shall be postmarked by the 30th day following the end of each quarter and shall include the following information:
 - 7.4.1.1 The magnitude of excess emissions computed in accordance with the applicable section of this regulation, any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions,
 - 7.4.1.2 All hourly averages shall be reported for SO₂ and NO_x monitors,
 - 7.4.1.3 Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. For each malfunction, the nature and cause (if known), the corrective action taken, and preventative measures adopted,
 - 7.4.1.4 The date and time identifying, and the duration of, each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments, and
 - 7.4.1.5 When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, this information shall be stated in the report.
- 7.5 Records of CEMS, steam flow, and temperature data shall be maintained for at least 3 years after the date of recording and shall be available for inspection upon request.
- 7.6 Records showing the names of persons who have completed review of the operating manual

and the documentation required by section 5.4, including the date of the initial review and all subsequent annual reviews, shall be maintained for at least 3 years after the date of manual review and shall be made available for inspection upon request.

- 7.7 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.
- 7.8 Documentation demonstrating that ash disposal from an affected facility complies with section 4.7 and has been submitted to the Kentucky Division of Waste Management in a frequency required by the Kentucky Division of Waste Management shall be maintained for at least 3 years and made available for inspection upon request.

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