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TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CHAPTER 120 – AIR RESOURCES

SUBCHAPTER 05 – AIR POLLUTION CONTROL

PART 39 – Hospital/Medical/Infectious Waste Incinerators

39.1 Purpose and Authority

39.1.1 Purpose

The purpose of this regulation is to limit emissions from hospital, medical and infectious waste incinerators.

39.1.2 Authority

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

39.2 Application

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

39.3 Severability

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

39.4 Incorporated Materials

- A. These regulations hereby adopt and incorporate 40 C.F.R. § 60 Appendix A-1 Method 1; 40 C.F.R. § 60 Appendix A-2 Methods 3, 3A and 3B; 40 C.F.R. § 60 Appendix A-3 Method 5; 40 C.F.R. § 60 Appendix A-4 Method 6, 6C, 7, 7E, 9, 10 and 10B; 40 C.F.R § 60 Appendix A-7 Methods 19, 22, and 23; 40 C.F.R. § 60 Appendix A-8 Method 26, 26A, and 29; 40 C.F.R. §§ 60.58b(p) and (q) of Subpart Eb, 40 C.F.R § 60, Appendix B and F(2018) by reference, not including

any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

- B. These regulations hereby adopt and incorporate American Society of Mechanical Engineers (ASME) PTC 19.10-1981, Flue and Exhaust Gas Analysis (Part 10, Instruments and Apparatus) (1981) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- C. These regulations hereby adopt and incorporate ASTM D6784-02 (2002) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- D. These regulations hereby adopt and incorporate the Environmental Protection Agency's "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015) (1997) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

39.5 Definitions

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0](#) of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
 - 1. "Bag leak detection system" means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light-scattering, light-transmittance, or other effects to monitor relative PM loadings.
 - 2. "Batch HMIWI" means an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.
 - 3. "Biologicals" means preparations made from living organisms and their products, including vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto.
 - 4. "Blood products" means any product derived from human blood, including but not limited to blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc.

5. "Body fluids" means liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; and semen and vaginal secretions.
6. "Bypass stack" means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.
7. "Chemotherapeutic waste" means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.
8. "Commercial HMIWI" means a HMIWI which offers incineration services for hospital/medical/infectious waste generated offsite by firms unrelated to the firm that owns the HMIWI.
9. "Co-fired combustor" or "Co-fired incinerator" means a unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes and subject to an enforceable requirement limiting the unit to combusting a fuel stream, ten percent 10% or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.
10. "Continuous emission monitoring system" or "CEMS" means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.
11. "Continuous HMIWI" means an HMIWI that is designed to allow waste charging and ash removal during combustion.
12. "Dioxins/furans" means the combined emissions of tetra- through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by EPA 40 C.F.R. § 60 Appendix A-7, Reference Method 23.
13. "Dry scrubber" means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gases in the HMIWI exhaust stream forming a dry powder material.
14. "Fabric filter or baghouse" means an add-on air pollution control system that removes particulate matter (PM) and nonvaporous metals emissions by passing flue gas through filter bags.

15. “Facilities manager” means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner or operator’s representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support systems.
16. “High-air phase” means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.
17. “Hospital” means any facility which has an organized medical staff, maintains at least six (6) inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human patients who are not related and who stay on average in excess of twenty-four (24) hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.
18. “Hospital/medical/infectious waste incinerator” or “HMIWI” or “HMIWI unit” means any device that combusts any amount of hospital waste and/or medical/infectious waste.
19. “Hospital/medical/infectious waste incinerator operator” or “HMIWI” operator” means any person who operates, controls or supervises the day-to-day operation of an HMIWI.
20. “Hospital waste” means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.
21. “Infectious agent” means any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.
22. “Intermittent HMIWI” means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.
23. “Large HMIWI” means an HMIWI whose maximum design waste burning capacity is more than five hundred (500) pounds per hour; or
 - a. A continuous or intermittent HMIWI whose maximum charge rate is more than five hundred (500) pounds per hour; or

- b. A batch HMIWI whose maximum charge rate is more than four thousand (4,000) pounds per day.

- 24. “Low-level radioactive waste” means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the 42 U.S.C. § 2014(e)(2) (Atomic Energy Act of 1954).

- 25. “Malfunction” means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions.

- 26. “Maximum charge rate” means:
 - a. For continuous and intermittent HMIWI, one hundred ten percent (110%) of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.
 - b. For batch HMIWI, one hundred ten percent (110%) of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

- 27. “Maximum design waste burning capacity” means:
 - a. For intermittent and continuous HMIWI

$$C = P_v \times 15,000/8,500$$

Where:

C = HMIWI capacity, lb/hr

P_v = primary chamber volume, ft³

15,000 = primary chamber heat release factor, Btu/ft³/hr

8,500 = standard waste heating value, Btu/lb;

b. For batch HMIWI

$$C = P_v \times 4.5/8$$

Where:

C = HMIWI capacity, lb/hr

P_v = primary chamber volume, ft³

4.5 = waste density, lb/ft³

8 = typical hours of operation of a batch HMIWI, hours.

28. "Maximum fabric filter inlet temperature" means one hundred ten percent (110%) of the lowest 3-hour average temperature at the inlet to the fabric filter (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.
29. "Maximum flue gas temperature" means one hundred ten percent (110%) of the lowest 3-hour average temperature at the outlet from the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the mercury (Hg) emission limit.
30. "Medical/infectious waste" means any of the following waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals:
- a. Cultures and stocks of infectious agents and associated biologicals, including: cultures 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. Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers;

- c. Human blood and blood products including:
 - (1) Liquid waste human blood;
 - (2) Products of blood;
 - (3) Items saturated and/or dripping with human blood; or
 - (4) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category;
 - d. Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), Pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips;
 - e. Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals;
 - f. Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases; and
 - g. Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.
31. "Medium HMIWI" means:
- a. A HMIWI whose maximum design waste burning capacity is more than two hundred (200) pounds per hour but less than or equal to five hundred (500) pounds per hour; or

- b. A continuous or intermittent HMIWI whose maximum charge rate is more than two hundred (200) pounds per hour but less than or equal to five hundred (500) pounds per hour; or
 - c. A batch HMIWI whose maximum charge rate is more than one thousand six hundred (1,600) pounds per day but less than or equal to four thousand (4,000) pounds per day.
32. "Minimum dioxin/furan sorbent flow" means ninety percent (90%) of the highest 3-hour average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.
 33. "Minimum mercury (Hg) sorbent flow rate" means ninety percent (90%) of the highest 3-hour average Hg sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the Hg emission limit.
 34. "Minimum hydrogen chloride (HCl) sorbent flow rate" means ninety percent (90%) of the highest 3-hour average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the HCl emission limit.
 35. "Minimum horsepower or amperage" means ninety percent (90%) of the highest 3-hour average horsepower or amperage to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with all applicable emission limits.
 36. "Minimum pressure drop across the wet scrubber" means ninety percent (90%) of the highest 3-hour average pressure drop across the wet scrubber PM control device (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM emission limit.
 37. "Minimum reagent flow rate" means ninety percent (90%) of the highest 3-hour average reagent flow rate at the inlet to the selective noncatalytic reduction technology (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the NO_x emissions limit.
 38. "Minimum scrubber liquor flow rate" means ninety percent (90%) of the highest 3-hour average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most

recent performance test demonstrating compliance with all applicable emission limits.

39. "Minimum scrubber liquor pH" means ninety percent (90%) of the highest 3-hour average liquor pH at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the HCl emission limit.
40. "Minimum secondary chamber temperature" means ninety percent (90%) of the highest 3-hour average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM, carbon monoxide (CO), or dioxin/furan emission limits.
41. "Modification" or "Modified HMIWI" means any change to an HMIWI unit after the effective date of this regulation such that:
 - a. The cumulative costs of the modifications, over the life of the unit, exceed fifty percent (50%) of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or
 - b. The change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under 42 U.S.C. § 7429 (CAA § 129) or 42 U.S.C. § 7411 (CAA § 111).
42. "Operating day" means a 24-hour period between 12:00 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.
43. "Operation" means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.
44. "Particulate matter" or "PM" means the total particulate matter emitted from an HMIWI as measured by 40 C.F.R. § 60 Appendix A-3 Method 5 or 40 C.F.R. § 60 Appendix A-8 Method 29.
45. "Pathological waste" means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

46. "Primary chamber" means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.
47. "Pyrolysis" means the endothermic gasification of hospital waste and/or medical/infectious waste using external energy.
48. "Secondary chamber" means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.
49. "Shutdown" means the period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown shall commence no less than two (2) hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than four (4) hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than five (5) hours after the high-air phase of combustion has been completed.
50. "Small HMIWI" means an HMIWI whose maximum design waste burning capacity is less than or equal to two hundred (200) pounds per hour and which has a maximum charge rate less than or equal to two hundred (200) pounds per hour for continuous or intermittent HMIWI and less than or equal to one thousand six hundred (1,600) pounds per day for batch HMIWI.
51. "Standard conditions" means a temperature of twenty degrees Celsius (20°C) and a pressure of 101.3 kilopascals.
52. "Startup" means the period of time between the activation of the system and the first charge to the unit. For batch HMIWI, startup means the period of time between activation of the system and ignition of the waste.
53. "Total dioxin/furan" means the sum of the emissions of all tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans, as measured by 40 C.F.R. § 60 Appendix A-7 Method 23.
54. "Toxic equivalent quantity" or "TEQ" means the emissions of those congeners weighted according to international toxic equivalency factors and then summed.
55. "Wet scrubber" means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

39.6 Applicability

- A. Except as provided in §§ 39.6(B) through (G) of this Part, the provisions of this regulation shall apply to all HMIWI.
- B. An incinerator is not subject to this regulation if it is burning only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste, provided that the owner or operator of the incinerator:
 - 1. Has notified the Office of Air Resources, in writing, that it is burning only pathological, low-level radioactive, and/or chemotherapeutic waste and has received a determination in writing from the Office of Air Resources that it is not subject to those subsections; and
 - 2. Records continuously, summarizes quarterly, and keeps available for inspection for a period of five (5) years records of all times when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned.
- C. A co-fired incinerator is not subject to this regulation if the owner or operator of the incinerator:
 - 1. Has notified the Office of Air Resources, in writing, that it is a co-fired incinerator, and has received a determination from the Office of Air Resources that it is not subject to those subsections;
 - 2. As part of this notification, provides a range of the relative weights of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted; and
 - 3. Records continuously, summarizes quarterly, and keeps available for inspection for a period of five years records of the type and weight of hospital waste and medical/infectious waste burned, and the weight of all other fuels and wastes burned at the co-fired incinerator.
- D. Any combustor/incinerator required to have a permit under Section 3005 of 42 U.S.C. § 6925 (Section 3005 of the Solid Waste Disposal Act) is not subject to this regulation.
- E. Any combustor/incinerator which meets the applicability requirements under 40 C.F.R. § 60, Subparts Cb, Ea, or Eb is not subject to this regulation.
- F. Any pyrolysis unit, as defined in § 39.5(A)(47) of this Part, is not subject to this regulation.

- G. Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this regulation. For any HMIWI, this regulation supersedes [Part 12](#) of this Subchapter (Incinerators) for those areas where there are overlapping requirements. HMIWI must comply with all applicable provisions of this regulation.

39.7 Waste Management Plan

- A. The owner or operator of an affected facility shall prepare a waste management plan that must include the following:
1. A description of waste separation programs to be implemented at the facility which, to the maximum degree feasible, remove from the waste stream, prior to incineration, products that contribute to emissions of hazardous air pollutants from the HMIWI. The feasibility of removal of the following products from the waste stream must be evaluated: mercury-containing products, paper, cardboard, plastics, glass, battery, metals, and materials that contain polyvinyl chloride (PVC) and/or other dioxin/furan precursors;
 2. A description of recycling programs to be implemented at the facility, such as programs to recycle mercury products, paper, cardboard, plastics, glass, batteries, materials which contain PVC and/or other dioxin/furan precursors and metals; and/ or purchasing recycled or recyclable products;
 3. A description of reasonably available additional waste management measures (for example, product substitution) which will be implemented at the facility, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts associated with such measures;
 4. Dates that the programs and measures specified in §§ 39.7(A)(1) through (3) of this Part, will be implemented;
 5. A statement that the HMIWI will require, through a contract or another legally binding mechanism, that any other facility which generates and transports hospital/ medical/ infectious waste to the HMIWI for incineration has adopted and is complying with a Waste Management Plan consistent with that adopted by the HMIWI;
 6. All aspects of this Waste Management Plan must be in compliance with the RI DEM Office of Waste Management's Medical Waste Regulations,

[Part 140-15-1](#) of this Title, and other applicable rules and policies of that Office;

7. "An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities," a 1993 publication by the American Society for Health Care Environmental Services of the American Hospital Association, Chicago, Illinois, shall be utilized in the development of the Waste Management Plan. Other appropriate publications as they become available should also be utilized in the development of the Waste Management Plan; and
8. The Waste Management Plan may specify different goals or approaches for different areas or departments at the facility and need not include waste management goals for every waste stream.

39.8 Pre-Construction Requirements and Siting Criteria

39.8.1 Pre-Construction Requirements

All HMIWI, must comply with all construction permit requirements in [Part 9](#) of this Subchapter (Air Pollution Control Permits).

39.8.2 Siting Criteria

- A. The owner or operator of an affected facility shall prepare an analysis of the impacts of the affected facility. The analysis shall consider air pollution control alternatives that minimize, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, non-air environmental impacts, or any other factors related to the practicability of the alternatives.
- B. The analyses of facility impacts prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, as long as they include the consideration of air pollution control alternatives specified in § 39.8.2(A) of this Part.
- C. The owner or operator of the affected facility shall complete and submit the siting requirements of this section as required under § 39.13(A)(3) of this Part.

39.9 Emission Limitations

- A. All HMIWI must comply with the emission limits listed in § 39.16 of this Part upon commencing operations.
 1. Stack emissions shall not exhibit more than 6 percent (6%) opacity (6-minute block average).

- B. All HMIWI must also comply with the following fugitive ash emission limits upon start-up:
1. Emissions of combustion ash from ash conveying systems (including conveyor transfer points) at large HMIWI shall not be visible for more than five percent (5%) of an observation period (i.e., nine (9) minutes per 3-hour period), as determined by 40 C.F.R. § 60, Appendix A-1, Method 22, incorporated in § 39.4(A) of this Part, except as provided in §§ 39.9(B)(2) and (3) of this Part;
 2. The emission limit specified in § 39.9(B)(1) of this Part does not apply to visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit does apply to visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems; and
 3. The provisions specified in § 39.9(B)(1) of this Part do not apply during maintenance and repair of ash conveying systems. Maintenance and/or repair shall not occur on more than 10 (ten) operating days per calendar quarter unless the owner or operator obtains written approval from the Office of Air Resources establishing a date whereby all necessary maintenance and repairs of ash conveying systems shall be completed.
- C. The emission limits in §§ 39.9(A) and (B) of this Part do not apply during periods of startup or shutdown, provided that no hospital waste or medical/infectious waste is charged to the HMIWI during those periods. During periods of malfunction the operator shall operate within established parameters as much as possible, and shall continue monitoring all applicable operating parameters until all waste has been combusted or until the malfunction ceases, whichever comes first. In addition, the malfunction must be reported to the Office of Air Resources within twenty-four (24) hours. A written report must be submitted to the Office of Air Resources within seven (7) days, which includes the cause of the malfunction, any exceedance, and actions taken to prevent reoccurrence.
- D. Any violation of the emission limitations in §§ 39.9(A) and (B) of this Part must be reported to the Office of Air Resources within twenty-four (24) hours. A written explanation of the cause of the violation, the magnitude of the exceedance and its duration, as well as actions taken to prevent a reoccurrence must be submitted to the Office of Air Resources within seven (7) calendar days.

39.10 Inspection and Repair Requirements

- A. The owner or operator of any HMIWI subject to the emission limits in §§ 39.9(A) and (B) of this Part must conduct an initial equipment inspection identifying any

necessary repairs and yearly thereafter. All inspections must include the following:

1. Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation; clean pilot flame sensor, as necessary;
 2. Ensure proper adjustment of primary and secondary chamber combustion air, and adjust as necessary;
 3. Inspect hinges and door latches, and lubricate as necessary;
 4. Inspect dampers, fans, and blowers for proper operation;
 5. Inspect HMIWI door and door gaskets for proper sealing;
 6. Inspect motors for proper operation;
 7. Inspect primary chamber refractory lining; clean and repair/replace lining as necessary;
 8. Inspect incinerator shell for corrosion and/or hot spots;
 9. Inspect secondary/tertiary chamber and stack and clean as necessary;
 10. Inspect mechanical loader, including limit switches, for proper operation, if applicable;
 11. Visually inspect waste bed (grates), and repair/seal, as appropriate;
 12. For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments;
 13. Inspect air pollution control device(s) for proper operation, if applicable;
 14. Inspect waste heat boiler systems to ensure proper operation, if applicable;
 15. Inspect bypass stack components;
 16. Ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment; and
 17. Generally observe that the equipment is maintained in good operating condition.
- B. Any equipment deficiencies identified in the inspections as required in § 39.10(A) of this Part, or as a result of an equipment failure shall be completed within ten

(10) days upon identification unless the owner or operator obtains written approval from the Department establishing an alternative date whereby all corrections of deficiencies shall be completed.

39.11 Compliance and Performance Testing Requirements

- A. Any HMIWI subject to the emissions limitations in §§ 39.9(A) and (B) of this Part, must conduct an initial performance test to demonstrate compliance with those emission limits.
- B. A performance test protocol must be submitted for review and approval to the Office of Air Resources at least sixty (60) days prior to conducting the initial or repeat performance test. The use of the bypass stack during a performance test shall invalidate the performance test. The initial performance tests shall be conducted according to the following specifications:
1. All performance tests shall consist of a minimum of three (3) test runs conducted under representative operating conditions;
 2. The minimum sampling time shall be one (1) hour per test run unless otherwise required by the Office of Air Resources;
 3. 40 C.F.R. § 60 Appendix A Method 1, incorporated in § 39.4(A) of this Part, shall be used to select the sampling location and number of traverse points;
 4. 40 C.F.R. § 60 Appendix A-2 Method 3, 3A or 3B, incorporated in § 39.4(A) of this Part, shall be used for gas composition analysis, including measurement of oxygen concentration. 40 C.F.R. § 60 Appendix A-2 Method 3, 3A or 3B, incorporated in § 39.4(A) of this Part shall be used simultaneously with each reference method. As an alternative to 40 C.F.R. § 60, Appendix A-2, Method 3B, American Society of Mechanical Engineers (ASME) PTC 19.10-1981, Flue and Exhaust Gas Analysis (Part 10, Instruments and Apparatus), incorporated in § 39.4(B) of this Part, may be used;
 5. The pollutant concentrations shall be adjusted to seven percent (7%) oxygen using the following equation:

$$C_{adj} = C_{meas} (20.9-7)/(20.9-\%O_2)$$

Where:

C_{adj} = pollutant concentration adjusted to seven percent (7%) oxygen;

C_{meas} = pollutant concentration measured on a dry basis

(20.9-7) = 20.9 percent oxygen - seven percent (7%) (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

%O₂ = oxygen concentration measured on a dry basis, percent;

6. 40 C.F.R. § 60 Appendix A-3, Method 5, Appendix A-8 Method 26A or 29, incorporated in § 39.4(A) of this Part, shall be used to measure the particulate matter (PM) emissions. As an alternative, PM CEMS may be used as specified in § 39.11(F) of this Part;
7. 40 C.F.R. § 60 Appendix A-4, Method 9, incorporated in § 39.4(A) of this Part, shall be used to measure stack opacity. As an alternative, demonstration of compliance with the PM [standards](#) using [bag leak detection systems](#) as specified in [§ 39.12\(F\)](#) of this Part or PM [CEMS](#) as specified in § 39.11(F) of this Part is considered demonstrative of compliance with the [opacity](#) requirements;
8. 40 C.F.R. § 60, Appendix A-4, Method 10 or 10B, incorporated in § 39.4(A) of this Part, shall be used to measure the carbon monoxide (CO) emissions. As specified in § 39.11(E) of this Part, use of CO CEMS are required.
9. 40 C.F.R. § 60, Appendix A-7, Method 23, incorporated in § 39.4(A) of this Part, shall be used to measure total dioxin/furan emissions. As an alternative, an owner or operator may elect to sample dioxins/furans by installing, calibrating, maintaining, and operating a continuous automated sampling system for monitoring dioxin/furan emissions as specified in § 39.11(G) of this Part. The minimum sampling time shall be four (4) hours per test run. If the affected facility has selected the toxic equivalency standards for dioxins/furans, under § 39.9 of this Part, the following procedures shall be used to determine compliance:
 - a. Measure the concentration of each dioxin/furan tetra- through octa-congener emitted using 40 C.F.R. § 60, Appendix A-7, Method 23, incorporated in § 39.4(A) of this Part.
 - b. For each dioxin/furan congener measured in accordance with § 39.11(B)(9)(a) of this Part, multiply the congener concentration by

its corresponding toxic equivalency factor, as specified in § 39.17 of this Part.

- c. Sum the products calculated in accordance with § 39.11(B)(9)(b) of this Part to obtain the total concentration of dioxans/furans emitted in terms of toxic equivalent.
10. 40 C.F.R. § 60, Appendix A-8, Method 26 or 26A, incorporated in § 39.4(A) of this Part, shall be used to measure hydrogen chloride (HCl) emissions. As an alternative, HCl CEMS may be used as specified in § 39.11(F) of this Part;
 11. 40 C.F.R. § 60, Appendix A-8, Method 29, incorporated in § 39.4(A) of this Part shall be used to measure lead (Pb), cadmium (Cd), and mercury (Hg) emissions. As an alternative, Hg emissions may be measured using ASTM D6784-02, incorporated in § 39.4(C) of this Part. As an alternative for Pb, Cd, and Hg, multi-metals CEMS or Hg CEMS, may be used as specified in § 39.11(F) of this Part. As an alternative, an owner or operator may elect to sample Hg by installing, calibrating, maintaining, and operating a continuous automated sampling system for monitoring Hg emissions as specified in § 39.11(H) of this Part.
 12. 40 C.F.R. § 60, Appendix A-7, Method 22, incorporated in § 39.4(A) of this Part, shall be used to determine compliance with the fugitive ash emission limits for HMIWI specified in § 39.9(B) of this Part. The minimum observation time shall be a series of three (3) one-hour observations.
 13. 40 C.F.R. § 60, Appendix A-4, Method 7 or 7E, incorporated in § 39.4(A) of this Part, shall be used to measure NO_x emissions.
 14. 40 C.F.R. § 60, Appendix A-4, Method 6 or 6C, incorporated in § 39.4(A) of this Part, shall be used to measure SO₂ emissions.
- C. The owner of a HMIWI shall conduct periodic performance tests to determine continuing compliance with the emission limits specified in § 39.9 of this Part for opacity, PM, CO, and HCl using the applicable test methods specified in § 39.11(B) of this Part. The use of a bypass stack during a performance test shall invalidate the performance test. Periodic tests shall be conducted according to the following schedule:
1. Except as provided in §§ 39.11(E) and (F) of this Part, periodic tests shall be conducted no more than twelve (12) months after the initial performance test at the facility and, thereafter, no more than twelve (12) months following the previous performance test.

2. If, in a 3-year period, all three (3) annual performance tests demonstrate compliance with the emission limit for a pollutant (PM, CO, or HCl), the frequency of testing for that pollutant may be reduced to once in three years. If any performance test indicates noncompliance with an applicable emission limit, performance tests for that pollutant shall be conducted annually until all annual performance tests in a 3-year period indicate compliance with the emission limit. In no case shall the period between performance tests for PM, CO, or HCl be longer than three (3) years.
- D. For large HMIWI, continuing compliance with the visible emission limits for fugitive emissions from fly ash/bottom ash storage and handling in § 39.9(B)(1) of this Part, must be demonstrated by conducting a performance test using 40 C.F.R. § 60, Appendix A-7 Method 22, incorporated in § 39.4(A) of this Part, no more than twelve (12) months after the initial performance test and annually thereafter.
- E. For any HMIWI, compliance shall be determined for the CO emissions limit using a CO CEMS according §§ 39.11(E)(1) through (3) of this Part:
1. Determine compliance with the CO emissions limit using a 24-hour block average, calculated as specified in section 12.4.1 of 40 C.F.R. § 60, Appendix A-7, Method 19, incorporated in § 39.4(A) of this Part.
 2. Operate the CO CEMS in accordance with the applicable procedures under 40 C.F.R. § 60, Appendix B and F, incorporated in § 39.4(A) of this Part.
 3. Use of a CO CEMS may be substituted for the CO annual performance test and minimum secondary chamber temperature to demonstrate compliance with the CO emissions limit.
- F. HMIWI may use a CEMS to demonstrate continuing compliance with any of the applicable emission limits in § 39.9(A) of this Part, provided that:
1. Compliance with the applicable emissions limit(s) is determined by using a 24-hour block average, calculated as specified in section 12.4.1, 40 C.F.R. § 60, Appendix A-7, Method 19, incorporated in § 39.4(A) of this Part;
 2. All CEMS are operated in accordance with the applicable procedures specified in 40 C.F.R. § 60, Appendices B and F incorporated in § 39.4(A) of this Part;
 3. HCl CEMS may be substituted for the HCl annual performance test, minimum HCl sorbent flow rate, and minimum scrubber liquor pH to demonstrate compliance with the HCl emissions limit; and

4. PM CEMS may be substituted for the PM annual performance test and minimum pressure drop across the wet scrubber, if applicable, to demonstrate compliance with the PM emissions limit.
- G. A HMIWI using a continuous automated sampling system to demonstrate compliance with the dioxin/furan emissions limits under § 39.9 of this Part shall record the output of the system and analyze the sample according to 40 C.F.R. § 60, Appendix A-7 Method 23, incorporated in § 39.4(A) of this Part.
1. The owner or operator of an HMIWI who elects to continuously sample dioxin/furan emissions instead of sampling and testing using 40 C.F.R. § 60 Appendix A-7, Method 23, incorporated in § 39.4(A) of this Part shall install, calibrate, maintain, and operate a continuous automated sampling system and shall comply with the requirements specified in 40 C.F.R. 60.58b(p) and (q) Subpart Eb, incorporated in § 39.4(A) of this Part.
- H. The owner or operator of a HMIWI using a continuous automated sampling system to demonstrate compliance with the Hg emissions limits under § 39.9 of this Part shall record the output of the system and analyze the sample at set intervals using any suitable determinative technique that can meet appropriate performance criteria.
1. The owner or operator of a HMIWI who elects to continuously sample Hg emissions instead of sampling and testing using 40 C.F.R. § 60, Appendix A-8, Method 29 incorporated in § 39.4(A) of this Part, or an approved alternative method for measuring Hg emissions, shall install, calibrate, maintain, and operate a continuous automated sampling system and shall comply with the requirements specified in 40 C.F.R. § 60.58b(p) and (q) of Subpart Eb incorporated in § 39.4(A) of this Part.
- I. Except as provided in §§ 39.11(E) through (H) of this Part, the owner or operator of a HMIWI equipped with a dry scrubber followed by a fabric filter; a wet scrubber; or a dry scrubber followed by a fabric filter and wet scrubber shall:
1. During the initial performance test, establish maximum and minimum values for each of the applicable operating parameters listed in § 39.18 of this Part, as site-specific operating parameters; and
 2. Following the date on which the initial performance test is completed or is required to be completed, whichever is earlier, ensure that the HMIWI does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters, measured as 3-hour rolling averages (calculated each hour as the average of the previous three (3) operating hours) at all times except

during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating parameter(s) shall constitute a violation of that operating parameter(s).

- J. Except as provided in § 39.11(N) of this Part, continuous compliance status for HMIWI equipped with a dry scrubber followed by a fabric filter shall be determined as follows:
1. Operation of the HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.
 2. Operation of the HMIWI above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.
 3. Operation of the HMIWI above the maximum charge rate and below the minimum HCl sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.
 4. Operation of the HMIWI above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.
 5. Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.
 6. Operation of the HMIWI above the CO emissions limit as measured by the CO CEMS specified in § 39.11(E) of this Part shall constitute a violation of the CO emissions limit.
 7. Failure of the owner or operator of the HMIWI to initiate corrective action within one (1) hour of a bag leak detection system alarm; or failure to operate and maintain the fabric filter such that the alarm is not engaged for more than five percent (5%) of the total operating time in a six-month block reporting period shall constitute a violation of the PM emissions limit. If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each

alarm is counted as a minimum of one (1) hour. If it takes longer than one (1) hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action. If the bag leak detection system is used to demonstrate compliance with the opacity limit, this would also constitute a violation of the opacity emissions limit.

8. Operation of the HMIWI above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in § 39.11(F) of this Part shall constitute a violation of the applicable emissions limit.
 9. Operation of the HMIWI above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in § 39.11(G) of this Part shall constitute a violation of the dioxin/furan emissions limit.
 10. Operation of the HMIWI above the Hg emissions limit as measured by the continuous automated sampling system specified in § 39.11(H) of this Part shall constitute a violation of the Hg emissions limit.
- K. Except as provided in § 39.11(N) of this Part, continuous compliance status for HMIWI equipped with a wet scrubber shall be determined as follows:
1. Operation of the HMIWI above the maximum charge rate and below the minimum pressure drop across the wet scrubber or below the minimum horsepower or amperage to the system (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM emission limit.
 2. Operation of the HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.
 3. Operation of the HMIWI above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum scrubber liquor flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.
 4. Operation of the HMIWI above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.
 5. Operation of the HMIWI above the maximum flue gas temperature and above the maximum charge rate (each measured on a 3-hour rolling

average) simultaneously shall constitute a violation of the Hg emission limit.

6. Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.
 7. Operation of the HMIWI above the CO emissions limit as measured by the CO CEMS specified in § 39.11(E) of this Part shall constitute a violation of the CO emissions limit.
 8. Operation of the HMIWI above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in § 39.11(F) of this Part shall constitute a violation of the applicable emissions limit.
 9. Operation of the HMIWI above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in § 39.11(G) of this Part shall constitute a violation of the dioxin/furan emissions limit.
 10. Operation of the HMIWI above the Hg emissions limit as measured by the continuous automated sampling system specified in § 39.11(H) of this Part shall constitute a violation of the Hg emissions limit.
- L. Except as provided in § 39.10(N) of this Part, continuous compliance status for HMIWI equipped with a dry scrubber followed by a fabric filter and a wet scrubber shall be determined as follows:
1. Operation of the HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.
 2. Operation of the HMIWI above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.
 3. Operation of the HMIWI above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.
 4. Operation of the HMIWI above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling

average) simultaneously shall constitute a violation of the Hg emission limit.

5. Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.
 6. Operation of the HMIWI above the CO emissions limit as measured by the CO CEMS specified in § 39.11(E) of this Part shall constitute a violation of the CO emissions limit.
 7. Failure of the owner or operator of the HMIWI to initiate corrective action within one (1) hour of a bag leak detection system alarm; or failure to operate and maintain the fabric filter such that the alarm is not engaged for more than five percent (5%) of the total operating time in a 6-month block reporting period shall constitute a violation of the PM emissions limit. If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of one (1) hour. If it takes longer than one (1) hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action. If the bag leak detection system is used to demonstrate compliance with the opacity limit, this would also constitute a violation of the opacity emissions limit.
 8. Operation of the HMIWI above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in § 39.11(F) of this Part shall constitute a violation of the applicable emissions limit.
 9. Operation of the HMIWI above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in § 39.11(G) of this Part shall constitute a violation of the dioxin/furan emissions limit.
 10. Operation of the HMIWI above the Hg emissions limit as measured by the continuous automated sampling system specified in § 39.11(H) of this Part shall constitute a violation of the Hg emissions limit.
- M. The owner or operator of an HMIWI equipped with selective noncatalytic reduction technology shall:
1. Establish the maximum charge rate, the minimum secondary chamber temperature, and the minimum reagent flow rate as site specific operating parameters during the initial performance test to determine compliance with the emissions limits;

2. Following the date on which the initial performance test is completed ensure that the affected facility does not operate above the maximum charge rate, or below the minimum secondary chamber temperature or the minimum reagent flow rate measured as 3-hour rolling averages (calculated each hour as the average of the previous three (3) operating hours) at all times. Operating parameter limits do not apply during performance tests.
 3. Except as provided in § 39.11(N) of this Part, operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum reagent flow rate simultaneously shall constitute a violation of the NOX emissions limit.
- N. The owner or operator of a HMIWI may conduct a repeat performance test within thirty (30) days of violation of applicable operating parameter(s) to demonstrate that the affected facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted for this purpose shall be conducted under the identical operating parameters that indicated a violation under §§ 39.11(J) through (M) of this Part.
- O. The owner or operator of a HMIWI using an air pollution control device other than a dry scrubber followed by a fabric filter; a wet scrubber; or a dry scrubber followed by a fabric filter and a wet scrubber; or selective noncatalytic reduction technology to comply with the applicable emission limits in § 39.9 of this Part, shall:
1. As part of the performance test protocol required in § 39.11(B) of this Part, the owner or operator must submit to the Director for approval site-specific operating parameters to be monitored during the initial performance test and continuously thereafter. The following information must be included in the submittal:
 - a. A description of the facility, including the devices controlled with the air pollution control device;
 - b. The proposed operating parameters to be monitored; and
 - c. Technical data and information demonstrating that the operating parameters submitted to be monitored are sufficient for monitoring operation of the alternative air pollution control device.
 2. The owner or operator shall not conduct the initial performance test until after the performance test protocol has been approved by the Director.
 3. Compliance with operating parameters shall be determined as follows:

- a. During the initial performance test, establish maximum and minimum values for each of the operating parameters approved by the Director as site-specific operating parameters; and
 - b. Following the date on which the initial performance test is completed or is required to be completed, ensure that the HMIWI does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters, measured as three (3) hour rolling averages (calculated each hour as the average of the previous three (3) operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating parameter(s) shall constitute a violation of that operating parameter(s).
- P. The owner or operator of a HMIWI may conduct a repeat performance test at any time to establish new values for the operating parameters. The Department may request a repeat performance test at any time. All stack testing must be observed by the Office of Air Resources or its authorized representatives to be considered acceptable.

39.12 Monitoring Requirements

- A. The owner or operator of a HMIWI shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring and recording the applicable maximum and minimum operating parameters listed in § 39.18 of this Part, (unless CEMS are used as a substitute for certain parameters as specified) such that these devices (or methods) measure and record values for these operating parameters at the frequencies indicated in that table at all times.
- B. The owner or operator of an HMIWI that uses selective noncatalytic reduction technology shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the operating parameters listed in § 39.11(M) of this Part such that the devices (or methods) measure and record values for the operating parameters at all times.
 1. Operating parameter values shall be measured and recorded at the following minimum frequencies:
 - a. Maximum charge rate shall be measured continuously and recorded once each hour;

- b. Minimum secondary chamber temperature shall be measured continuously and recorded once each minute; and
 - c. Minimum reagent flow rate shall be measured hourly and recorded once each hour.
- C. The owner or operator of a HMIWI shall install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.
- D. The owner or operator of a HMIWI using an air pollution control device other than a dry scrubber followed by a fabric filter; a wet scrubber; or a dry scrubber followed by a fabric filter and a wet scrubber; or selective noncatalytic reduction technology to comply with the emission limits in § 39.16 of this Part shall install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters established according to the provisions of § 39.11(O) of this Part.
- E. The owner or operator of a HMIWI shall obtain and record monitoring data at all times during operation of the HMIWI except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for seventy-five percent (75%) of the operating hours per day and for ninety percent (90%) of the operating days per calendar quarter that the HMIWI is combusting hospital waste and /or medical/infectious waste.
- F. For any HMIWI that use an air pollution control device that includes a fabric filter and are not demonstrating compliance using PM CEMS, determine compliance with the PM emissions limit using a bag leak detection system and meet the requirements in §§ 39.12(F)(1) through (12) of this Part for each bag leak detection system.
 - 1. Each triboelectric bag leak detection system may be installed, calibrated, operated, and maintained according to the EPA document entitled "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015), incorporated in § 39.4(D) of this Part. Other types of bag leak detection systems shall be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.
 - 2. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of ten (10) milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
 - 3. The bag leak detection system sensor shall provide an output of relative PM loadings.

4. The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor.
5. The bag leak detection system shall be equipped with an audible alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel.
6. For positive pressure fabric filter systems, a bag leak detector shall be installed in each baghouse compartment or cell.
7. For negative pressure or induced air fabric filters, the bag leak detector shall be installed downstream of the fabric filter.
8. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
9. The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time according to section 5.0 of the EPA document entitled "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015), incorporated in § 39.4(D) of this Part.
10. Following initial adjustment of the system, the sensitivity or range, averaging period, alarm set points, or alarm delay time may not be adjusted. In no case may the sensitivity be increased by more than one hundred percent (100%) or decreased more than fifty percent (50%) over a 365-day period unless such adjustment follows a complete fabric filter inspection that demonstrates that the fabric filter is in good operating condition. Each adjustment shall be recorded.
11. Record the results of each inspection, calibration, and validation check.
12. Initiate corrective action within one (1) hour of a bag leak detection system alarm; operate and maintain the fabric filter such that the alarm is not engaged for more than five (5) percent of the total operating time in a 6-month block reporting period. If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of one (1) hour. If it takes longer than one (1) hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action.

39.13 Reporting and Recordkeeping Requirements

- A. The owner or operator shall submit the following information prior to commencement of construction;
 - 1. A statement of intent to construct;
 - 2. The anticipated date of commencement of construction; and
 - 3. All documentation produced as a result of the siting requirements of § 39.8.2(B) of this Part.

- B. The owner or operator of a HMIWI shall submit the following information prior to initial startup;
 - 1. The type(s) of waste to be combusted;
 - 2. The maximum design waste burning capacity;
 - 3. The anticipated maximum charge rate; and
 - 4. If applicable, the petition for site-specific operating parameters under § 39.11(O) of this Part.

- C. The owner or operator of any HMIWI subject to this regulation shall maintain records of the following information, as applicable, for a period of at least five (5) years. The records must be made available for inspection, upon request by the Department:
 - 1. Calendar date of each record;
 - 2. Concentrations of pollutants listed in § 39.16 of this Part, and measurements of opacity, as determined by the continuous emission monitoring system, if applicable;
 - 3. Results of fugitive emissions tests using 40 C.F.R. § 60, Appendix A-7, Method 22, incorporated in § 39.4(A) of this Part, if applicable;
 - 4. HMIWI charge dates, times, and weights and hourly charge rates;
 - 5. Fabric filter inlet temperatures during each minute of operation, as applicable;
 - 6. Amount and type of dioxin/furan sorbent used during each hour of operation, as applicable;

7. Amount and type of Hg sorbent used during each hour of operation, as applicable;
8. Amount and type of HCl sorbent used during each hour of operation, as applicable;
9. Amount and type of NO_x reagent used during each hour of operation, as applicable;
10. Secondary chamber temperatures recorded during each minute of operation;
11. Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable;
12. Horsepower or amperage to the wet scrubber during each minute of operation, as applicable;
13. Pressure drop across the wet scrubber system during each minute of operation, as applicable;
14. Temperature at the outlet from the wet scrubber during each minute of operation, as applicable;
15. pH at the inlet to the wet scrubber during each minute of operation, as applicable;
16. Records of all operating parameter data collected pursuant to § 39.12 of this Part;
17. Records of each time the bypass stack was used, including date, time and duration, reason for malfunction, and corrective action taken;
18. Records of all operating parameter data collected for HMIWI complying with §§ 39.11(O) and 39.12(D) of this Part;
19. Records of the annual air pollution control device inspections, any required maintenance, and any repairs not completed within ten (10) days of an inspection.
20. Records of each bag leak detection system alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken, as applicable.

21. Records of concentrations of CO as determined by the continuous emissions monitoring system.
 22. Records of periods for which the monitoring data specified in § 39.13(C) (2) of this Part, was not obtained, including the date, time, duration, an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.
 23. Identification of the calendar day, time and duration of any malfunction, and a description of the malfunction and the corrective action taken.
 24. Identification of calendar days for which emission rates or operating parameters exceeded the applicable limits, with a description of the exceedance, reasons for the exceedance, and corrective actions taken.
 25. The results of initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable and a description, including sample calculations, of how the operating parameters were established or re-established, if applicable.
 26. All documentation produced to comply with the pre-construction requirements and siting requirements as specified in § 39.8 of this Part;
 27. Records of the names of HMIWI operators who have completed review of the information specified in § 39.14(H) of this Part, as required in § 39.14(I) of this Part, including the date of the initial review and all subsequent annual reviews;
 28. Records of the names of HMIWI operators who have completed the operator training and qualification requirements specified in § 39.14 of this Part, including documentation of training received, dates of training and dates of qualification;
 29. Records of calibration of any monitoring devices as required by §§ 39.12(A) through (D) of this Part.
- D. The owner or operator of a HMIWI shall submit the following information to the Office of Air Resources, signed by the facilities manager, no later than sixty (60) days following the initial performance test:
1. Emissions rates, operating parameters, and other applicable data pertaining to the initial performance test, as specified in §§ 39.11(B)(1) through (14) of this Part; and

2. The maximum and minimum values for the site-specific operating parameters established pursuant to §§ 39.11(I), 39.11(M) or 39.11(O) of this Part, as applicable.
 3. The waste management plan as specified in § 39.7 of this Part.
 4. For any HMIWI that uses a bag leak detection system, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in § 39.12(F) of this Part.
- E. The owner or operator of a HMIWI shall submit an annual report one (1) year following the submissions of the information in § 39.13(D) of this Part and subsequent reports shall be submitted no more than twelve (12) months following the previous report. If the HMIWI becomes subject to the permitting requirements in [Part 29](#) of this Subchapter (Operating Permits), the owner or operator of the HMIWI must submit these reports semiannually. The report shall include the information specified in §§ 39.13(E)(1) through (10) of this Part. All reports shall be signed by the facilities manager and all applicable information and records in this report must be maintained for five (5) years. The report must include the following information:
1. Any information recorded under §§ 39.13(E)(1) through (10) of this Part.
 2. The maximum and minimum values for the site-specific operating parameters established pursuant to §§ 39.11(I), (M) or (O) of this Part, as applicable;
 3. The highest and lowest values recorded for each applicable operating parameter during the reporting period and during the calendar year of the period being reported and the previous calendar year, as applicable;
 4. Any information recorded pursuant to §§ 39.13(C)(21) through (23) of this Part for the reporting period, the calendar year being reported and the previous calendar year, as applicable;
 5. If no exceedances or malfunctions were reported under §§ 39.13(C)(21) through (23) of this Part for the reporting period, a statement that no exceedance occurred during the reporting period; and
 6. If a performance test was conducted during the reporting period, the results of that test.
 7. Any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.

8. Records of the annual air pollution control device inspection, any required maintenance, and any repairs not completed within ten (10) days of an inspection.
 9. Records of each bag leak detection system alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken, as applicable.
 10. Records of concentrations of CO as determined by the continuous emissions monitoring system.
- F. The owner or operator of a HMIWI shall submit semiannual reports containing any information recorded under §§ 39.13(C)(21) through (23) of this Part, no later than sixty (60) days following the reporting period. The first semiannual reporting period ends six (6) months following the submission of information in § 39.13(D) of this Part. Subsequent reports shall be submitted no later than six (6) calendar months following the previous report. All reports shall be signed by the facilities manager.
- G. All records specified under § 39.13(C) of this Part shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Director. Records must be signed by the facilities manager.

39.14 HMIWI Operation, Training, and Qualification Requirements

- A. No owner or operator of an affected facility shall allow the facility to operate at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facility or available within one (1) hour. The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.
- B. HMIWI operator training and qualification shall be obtained and maintained according to the specifications in §§ 39.14(C) through (G) of this Part.
- C. HMIWI operator training shall be obtained by completing and passing an HMIWI operator training course that includes, at a minimum, the following elements:
1. Twenty-four (24) hours of training on the following subjects:
 - a. Environmental concerns, including pathogen destruction and types of emissions;
 - b. Basic combustion principles, including products of combustion;

- c. Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;
 - d. Combustion controls and monitoring;
 - e. Operation of air pollution control equipment and factors affecting performance, if applicable;
 - f. Methods to monitor pollutants (i.e. continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures, where applicable;
 - g. Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;
 - h. Actions to correct malfunctions or conditions that may lead to malfunction;
 - i. Bottom and fly ash characteristics and handling procedures;
 - j. Applicable Federal, State, and local regulations;
 - k. Work safety procedures;
 - l. Pre-startup inspections; and
 - m. Recordkeeping requirements;
2. An examination designed and administered by the instructor; and
 3. Reference material distributed to the attendees covering the course topics.

D. HMIWI operator qualification shall be obtained by:

1. Completing and passing a training course that satisfies the criteria listed in § 39.14(C) of this Part; and
2. Either six (6) months experience as an HMIWI operator, six (6) months experience as a direct supervisor of an HMIWI operator, or completion of at least two (2) burn cycles under the observation of two qualified HMIWI operators.

- E. HMIWI operator qualification is valid for one (1) year from the date on which the examination specified in § 39.14(C) of this Part is passed, or the completion of the required experience specified in § 39.14(D) of this Part, whichever is later.
- F. The trained and qualified HMIWI operator must maintain and renew qualification yearly by completing and passing an annual review or refresher course of at least four (4) hours covering, at a minimum, the following:
 - 1. Applicable regulations;
 - 2. Incinerator operation, including startup and shutdown procedures;
 - 3. Inspection and maintenance;
 - 4. Responses to malfunctions or conditions that may lead to malfunction; and
 - 5. Discussion of operating problems encountered by attendees.
- G. A lapsed qualification for a HMIWI operator may be renewed by one of the following methods:
 - 1. For a lapse of less than three (3) years, the HMIWI operator shall complete and pass a standard annual refresher course described in § 39.14(F) of this Part.
 - 2. For a lapse of three (3) years or more, the HMIWI operator shall complete and pass a training course with the minimum criteria described in § 39.14(C) of this Part.
- H. The owner or operator of an affected facility shall maintain the following documentation at the facility:
 - 1. A summary of applicable Federal, State, and local regulations;
 - 2. A description of basic combustion theory applicable to an HMIWI;
 - 3. Procedures for receiving, handling, and charging waste;
 - 4. HMIWI startup, shutdown, and malfunction procedures;
 - 5. Procedures for maintaining proper combustion air supply levels;
 - 6. Procedures for operating the HMIWI and associated air pollution control systems according to the requirements of this regulation;

7. Procedures for responding to periodic malfunction or conditions that may lead to malfunction;
 8. Procedures for monitoring HMIWI emissions;
 9. Reporting and recordkeeping procedures; and
 10. Procedures for handling ash.
- I. The owner or operator of an affected facility shall review the information listed in § 39.14(H) of this Part annually (no later than twelve (12) months after the previous review) with each HMIWI operator.
1. The initial review of the information listed in § 39.14(H) of this Part shall be conducted prior to the operator's assumption of responsibilities affecting HMIWI operation.
 2. Subsequent reviews of the information listed in § 39.14(H) of this Part shall be conducted annually (no later than twelve (12) months after the previous review).
- J. The information listed in § 39.14(H) of this Part shall be kept in a readily accessible location for all HMIWI operators. This information, along with records of training, shall be available for inspection by the Department or EPA upon request.

39.15 Inspection and Entry

- A. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter any facility subject to this regulation at all reasonable times for the purpose of:
1. Having access to and copying any applicable records to determine compliance with this regulation;
 2. Inspecting any equipment, practices, or operations required in this regulation;
 3. Sampling or monitoring substances or parameters for the purpose of assuring compliance with this regulation or other applicable requirements; and
 4. Any other areas or operations the Director deems necessary.
- B. Nothing in this regulation shall limit the ability of EPA to inspect or enter the premises of a HMIWI under the provisions of the Clean Air Act.

- C. No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out their official duties.

39.16 Table I: Emission limits for HMIWI

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits		
		HMIWI size		
		Small	Medium	Large
Particulate matter	milligrams per dry standard cubic meter (grains per dry standard cubic foot)	66 (0.029)	22 (0.0095)	18 (0.0080)
Carbon monoxide	parts per million by volume	20	1.8	11
Dioxins/furans	either: total dioxins/furans nanograms per dry standard cubic meter (grains per billion dry standard cubic feet), or total dioxin/furan TEQ nanograms per dry standard cubic meter (grains per billion dry standard cubic feet)	16 (7) 0.013 (0.0057)	0.47 (0.21) 0.014 (0.0061)	9.3 (4.1) 0.035 (0.0015)
Hydrogen chloride	parts per million by volume	15	7.7	5.1
Sulfur dioxide	parts per million by volume	1.4	1.4	8.1

Nitrogen oxides	parts per million by volume	67	67	140
Lead	milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.31 (0.14)	0.018 (0.0079)	0.00069 (0.0003)
Cadmium	milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.017 (0.0074)	0.0098 (0.0043)	0.00013 (0.000057)
Mercury	milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.014 (0.0061)	0.0035 (0.0015)	0.0013 (0.00057)

39.17 Table II: Toxic Equivalency Factors

Dioxin/furan congener	Toxic Equivalency Factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1

2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.001

39.18 Table III: Operating Parameters to be Monitored and Minimum Measurement and Recording Frequencies

Operating parameters to be monitored	Minimum frequency		Control system		
	Data measurement	Data recording	Dry scrubber followed by fabric filter	Wet scrubber	Dry scrubber followed by fabric filter and wet scrubber
Maximum operating parameters					
Maximum charge rate	continuous	1 per hour	√	√	√
Maximum fabric filter inlet temperature	continuous	1 per minute	√		√

Maximum flue gas temperature	continuous	1 per minute		√	
Minimum operating parameters					
Minimum secondary chamber temperature	continuous	1 per minute	√	√	√
Minimum dioxin/furan sorbent flow rate	hourly	1 per hour	√		√
Minimum HCl sorbent flow rate	hourly	1 per hour	√		√
Minimum mercury (Hg) sorbent flow rate	hourly	1 per hour	√		√
Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to wet scrubber	continuous	1 per minute		√	√
Minimum scrubber liquor flow rate	continuous	1 per minute		√	√
Minimum scrubber liquor pH	continuous	1 per minute		√	√

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TITLE 250 - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CHAPTER 120 - AIR RESOURCES

SUBCHAPTER 05 - AIR POLLUTION CONTROL

PART 39 - AIR POLLUTION CONTROL REGULATION NO. 39-

HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS

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