# Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

## Subpart Ec—Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996

**Source:** 62 FR 48382, Sept. 15, 1997, unless otherwise noted.

### § 60.50c Applicability and delegation of authority.

(a) Except as provided in paragraphs (b) through (h) of this section, the affected facility to which this subpart applies is each individual hospital/medical/infectious waste incinerator (HMIWI):

(1) For which construction is commenced after June 20, 1996 but no later than December 1, 2008; or

(2) For which modification is commenced after March 16, 1998 but no later than April 6, 2010.

(3) For which construction is commenced after December 1, 2008; or

(4) For which modification is commenced after April 6, 2010.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in §60.51c) is burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactivewaste and/or chemotherapeutic waste is burned.

(c) Any co-fired combustor (defined in §60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative amounts of hospital waste, medical/infectious waste, and other fuels and wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(d) Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under subpart Cb, Ea, or Eb of this part (standards or guidelines for certain municipal waste combustors) is not subject to this subpart.

(f) Any pyrolysis unit (defined in §60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI solely for the purpose of complying with emission guidelines under subpart Ce are not considered a modification and do not result in an existing HMIWI becoming subject to this subpart.

(i) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State:

(1) The requirements of Sec. 60.56c(i) establishing operating parameters when using controls other than those listed in Sec. 60.56c(d).

(2) Approval of alternative methods of demonstrating compliance under §60.8 including:

(i) Approval of CEMS for PM, HCl, multi-metals, and Hg where used for purposes of demonstrating compliance,

(ii) Approval of continuous automated sampling systems for dioxin/furan and Hg where used for purposes of demonstrating compliance, and

(iii) Approval of major alternatives to test methods;

(3) Approval of major alternatives to monitoring;

(4) Waiver of recordkeeping requirements; and

(5) Performance test and data reduction waivers under §60.8(b).

(j) Affected facilities subject to this subpart are not subject to the requirements of 40 CFR part 64.

(i) Approval of CEMS for PM, HCl, multi-metals, and Hg where used for purposes of demonstrating compliance,

(ii) Approval of continuous automated sampling systems for dioxin/furan and Hg where used for purposes of demonstrating compliance, and

(iii) Approval of major alternatives to test methods;

(3) Approval of major alternatives to monitoring;

(4) Waiver of recordkeeping requirements; and

(5) Performance test and data reduction waivers under §60.8(b).

(k) The requirements of this subpart shall become effective March 16, 1998

(l) Beginning September 15, 2000, or on the effective date of an EPA-approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, affected facilities subject to this subpart shall operate pursuant to a permit issued under the EPA approved State operating permit program.

(m) The requirements of this subpart as promulgated on September 15, 1997, shall apply to the affected facilities defined in paragraph (a)(1) and (2) of this section until the applicable compliance date of the requirements of subpart Ce of this part, as amended on October 6, 2009. Upon the compliance date of the requirements of the amended subpart Ce of this part, affected facilities as defined in paragraph (a) of this section are no longer subject to the requirements of this subpart, but are subject to the requirements of subpart Ce of this part, as amended on October 6, 2009, except where the emissions limits of this subpart as promulgated on September 15, 1997 are more stringent than the emissions limits of the amended subpart Ce of this part. Compliance with subpart Ce of this part, as amended on October 6, 2009 is required on or before the date 3 years after EPA approval of the State plan for States in which an affected facility as defined in paragraph (a) of this section is located (but not later than the date 5 years after promulgation of the amended subpart).

(n) The requirements of this subpart, as amended on October 6, 2009, shall become effective April 6, 2010.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51408, Oct. 6, 2009]

## § 60.51c Definitions.

*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.

*Batch HMIWI* means an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.

*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.

*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.

*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.

*Bypass stack* means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

*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.

*Co-fired combustor* means a unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting a fuel feed stream, 10 percent 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.

*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.

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

*Continuous HMIWI* means an HMIWI that is designed to allow waste charging and ash removal during combustion.

*Dioxins/furans* means the combined emissions of tetra-through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by EPA Reference Method 23.

*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.

*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.

*Facilities manager* means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's or operator's representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support services.

*High-air phase* means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.

*Hospital* means any facility which has an organized medical staff, maintains at least six 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 inpatients who are not related and who stay on average in excess of 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.

*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.

*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.

*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.

*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.

*Intermittent HMIWI* means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

*Large HMIWI* means:

(1) Except as provided in (2);

(i) An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.

(2) The following are not large HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is less than or equal to 4,000 pounds per day.

*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 Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

*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. During periods of malfunction the operator shall operate within established parameters as much as possible, and monitoring of all applicable operating parameters shall continue until all waste has been combusted or until the malfunction ceases, whichever comes first.

*Maximum charge rate* means:

(1) For continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(2) For batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

*Maximum design waste burning capacity* means:

(1) For intermittent and continuous HMIWI,

$C=P_V \times 15{,}000/8{,}500$

Where:

C=HMIWI capacity, lb/hr

$P_V$=primary chamber volume, $ft^3$

15,000=primary chamber heat release rate factor, $Btu/ft^3$ /hr

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

(2) For batch HMIWI,

$C=P_V \times 4.5/8$

Where:

C=HMIWI capacity, lb/hr

$P_V$=primary chamber volume, $ft^3$

4.5=waste density, $lb/ft^3$

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

*Maximum fabric filter inlet temperature* means 110 percent 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.

*Maximum flue gas temperature* means 110 percent 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.

*Medical/infectious waste* means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in §261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment mation; and domestic sewage materials identified in §261.4(a)(1) of this chapter.

(1) 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.

(2) 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.

(3) Human blood and blood products including:

(i) Liquid waste human blood;

(ii) Products of blood;

(iii) Items saturated and/or dripping with human blood; or

(iv) 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 include in this category.

(4) 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.

(5) 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.

(6) 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.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

*Medium HMIWI* means:

(1) Except as provided in paragraph (2);

(i) An HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.

(2) The following are not medium HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

*Minimum dioxin/furan sorbent flow rate* means 90 percent 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.

*Minimum Hg sorbent flow rate* means 90 percent 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.

*Minimum hydrogen chloride (HCl) sorbent flow rate* means 90 percent 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.

*Minimum horsepower or amperage* means 90 percent 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 the applicable emission limits.

*Minimum pressure drop across the wet scrubber* means 90 percent 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.

*Minimum reagent flow rate* means 90 percent 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.

*Minimum scrubber liquor flow rate* means 90 percent 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.

*Minimum scrubber liquor pH* means 90 percent 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.

*Minimum secondary chamber temperature* means 90 percent 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, CO, dioxin/furan, and $NO_X$emissions limits.

*Modification* or *Modified HMIWI* means any change to an HMIWI unit after the effective date of these standards such that:

(1) The cumulative costs of the modifications, over the life of the unit, exceed 50 per centum 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

(2) 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 section 129 or section 111.

*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.

*Operation* means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.

*Particulate matter* or *PM* means the total particulate matter emitted from an HMIWI as measured by EPA Reference Method 5 or EPA Reference Method 29.

*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).

*Primary chamber* means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

*Pyrolysis* means the endothermic gasification of hospital waste and/or medical/infectious waste using external energy.

*Secondary chamber* means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

*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 2 hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

*Small HMIWI* means:

(1) Except as provided in (2);

(i) An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.

(2) The following are not small HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour;

(ii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day.

*Standard conditions* means a temperature of 20 °C and a pressure of 101.3 kilopascals.

*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.

*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.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51408, Oct. 6, 2009]

## § 60.52c Emission limits.

(a) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere:

(1) From an affected facility as defined in §60.50c(a)(1) and (2), any gases that contain stack emissions in excess of the limits presented in Table 1A to this subpart.

(2) From an affected facility as defined in §60.50c(a)(3) and (4), any gases that contain stack emissions in excess of the limits presented in Table 1B to this subpart.

(b) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere:

(1) From an affected facility as defined in §60.50c(a)(1) and (2), any gases that exhibit greater than 10 percent opacity (6-minute block average).

(2) From an affected facility as defined in §60.50c(a)(3) and (4), any gases that exhibit greater than 6 percent opacity (6-minute block average).

(c) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility as defined in §60.50c(a)(1) and (2) and utilizing a large HMIWI, and in §60.50c(a)(3) and (4), shall cause to be discharged into the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period ( *i.e.,* 9 minutes per 3-hour period), as determined by EPA Reference Method 22 of appendix A–1 of this part, except as provided in paragraphs (d) and (e) of this section.

(d) The emission limit specified in paragraph (c) of this section does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(e) The provisions specified in paragraph (c) of this section do not apply during maintenance and repair of ash conveying systems. Maintenance and/or repair shall not exceed 10 operating days per calendar quarter unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary maintenance and repairs of ash conveying systems shall be completed.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51409, Oct. 6, 2009]

## § 60.53c Operator training and qualification requirements.

(a) No owner or operator of an affected facility shall allow the affected facility to operate at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facility or available within 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) Operator training and qualification shall be obtained through a State-approved program or by completing the requirements included in paragraphs (c) through (g) of this section.

(c) Training shall be obtained by completing an HMIWI operator training course that includes, at a minimum, the following provisions:

(1) 24 hours of training on the following subjects:

(i) Environmental concerns, including pathogen destruction and types of emissions;

(ii) Basic combustion principles, including products of combustion;

(iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;

(iv) Combustion controls and monitoring;

(v) Operation of air pollution control equipment and factors affecting performance (if applicable);

(vi) Methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable);

(vii) Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;

(viii) Actions to correct malfunctions or conditions that may lead to malfunction;

(ix) Bottom and fly ash characteristics and handling procedures;

(x) Applicable Federal, State, and local regulations;

(xi) Work safety procedures;

(xii) Pre-startup inspections; and

(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Reference material distributed to the attendees covering the course topics.

(d) Qualification shall be obtained by:

(1) Completion of a training course that satisfies the criteria under paragraph (c) of this section; and

(2) Either 6 months experience as an HMIWI operator, 6 months experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation of two qualified HMIWI operators.

(e) Qualification is valid from the date on which the examination is passed or the completion of the required experience, whichever is later.

(f) To maintain qualification, the trained and qualified HMIWI operator shall complete and pass an annual review or refresher course of at least 4 hours covering, at a minimum, the following:

(1) Update of 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 shall be renewed by one of the following methods:

(1) For a lapse of less than 3 years, the HMIWI operator shall complete and pass a standard annual refresher course described in paragraph (f) of this section.

(2) For a lapse of 3 years or more, the HMIWI operator shall complete and pass a training course with the minimum criteria described in paragraph (c) of this section.

(h) The owner or operator of an affected facility shall maintain documentation at the facility that address the following:

(1) Summary of the applicable standards under this subpart;

(2) 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 within the standards established under this subpart;

(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 establish a program for reviewing the information listed in paragraph (h) of this section annually with each HMIWI operator (defined in §60.51c).

(1) The initial review of the information listed in paragraph (h) of this section shall be conducted within 6 months after the effective date of this subpart or prior to assumption of responsibilities affecting HMIWI operation, whichever date is later.

(2) Subsequent reviews of the information listed in paragraph (h) of this section shall be conducted annually.

(j) The information listed in paragraph (h) of this section 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 EPA or its delegated enforcement agent upon request.

## § 60.54c Siting requirements.

(a) The owner or operator of an affected facility for which construction is commenced after September 15, 1997 shall prepare an analysis of the impacts of the affected facility. The analysis shall consider air pollution control alternatives that minimize, on a site-specific basis, 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) 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 paragraph (a) of this section.

(c) The owner or operator of the affected facility shall complete and submit the siting requirements of this section as required under §60.58c(a)(1)(iii).

## § 60.55c Waste management plan.

The owner or operator of an affected facility shall prepare a waste management plan. The waste management plan shall identify both the feasibility and the approach to separate certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste. A waste management plan may include, but is not limited to, elements such as segregation and recycling of paper, cardboard, plastics, glass, batteries, food waste, and metals ( *e.g.*, aluminum cans, metals-containing devices); segregation of non-recyclable wastes ( *e.g.*, polychlorinated biphenyl-containing waste, pharmaceutical waste, and mercury-containing waste, such as dental waste); and purchasing recycled or recyclable products. A waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have. The American Hospital Association publication entitled “An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities” (incorporated by reference, *see* §60.17) shall be considered in the development of the waste management plan. The owner or operator of each commercial HMIWI company shall conduct training and education programs in waste segregation for each of the company's waste generator clients and ensure that each client prepares its own waste management plan that includes, but is not limited to, the provisions listed previously in this section.

[74 FR 51409, Oct. 6, 2009]

## § 60.56c Compliance and performance testing.

(a) The emissions limits apply at all times.

(b) The owner or operator of an affected facility as defined in §60.50c(a)(1) and (2), shall conduct an initial performance test as required under §60.8 to determine compliance with the emissions limits using the procedures and test methods listed in paragraphs (b)(1) through (b)(6) and (b)(9) through (b)(14) of this section. The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4), shall conduct an initial performance test as required under §60.8 to determine compliance with the emissions limits using the procedures and test methods listed in paragraphs (b)(1) through (b)(14). The use of the bypass stack during a performance test shall invalidate the performance test.

(1) All performance tests shall consist of a minimum of three test runs conducted under representative operating conditions.

(2) The minimum sample time shall be 1 hour per test run unless otherwise indicated.

(3) EPA Reference Method 1 of appendix A of this part shall be used to select the sampling location and number of traverse points.

(4) EPA Reference Method 3, 3A, or 3B of appendix A–2 of this part shall be used for gas composition analysis, including measurement of oxygen concentration. EPA Reference Method 3, 3A, or 3B of appendix A–2 of this part shall be used simultaneously with each of the other EPA reference methods. As an alternative to EPA Reference Method 3B, ASME PTC–19–10–1981–Part 10 may be used (incorporated by reference, *see* §60.17).

(5) The pollutant concentrations shall be adjusted to 7 percent oxygen using the following equation:

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

where:

$C_{adj}$=pollutant concentration adjusted to 7 percent oxygen;

$C_{meas}$=pollutant concentration measured on a dry basis (20.9−7)=20.9 percent oxygen—7 percent oxygen (defined oxygen correction basis);

20.9=oxygen concentration in air, percent; and

$\%O_2$=oxygen concentration measured on a dry basis, percent.

(6) EPA Reference Method 5 of appendix A–3 or Method 26A or Method 29 of appendix A–8 of this part shall be used to measure the particulate matter emissions. As an alternative, PM CEMS may be used as specified in paragraph (c)(5) of this section.

(7) EPA Reference Method 7 or 7E of appendix A–4 of this part shall be used to measure $NO_X$emissions.

(8) EPA Reference Method 6 or 6C of appendix A–4 of this part shall be used to measure $SO_2$emissions.

(9) EPA Reference Method 9 of appendix A–4 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 §60.57c(h) or PM CEMS as specified in paragraph (c)(5) of this section is considered demonstrative of compliance with the opacity requirements.

(10) EPA Reference Method 10 or 10B of appendix A–4 of this part shall be used to measure the CO emissions. As specified in paragraph (c)(4) of this section, use of CO CEMS are required for affected facilities under §60.50c(a)(3) and (4).

(11) EPA Reference Method 23 of appendix A–7 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 paragraph (c)(6) of this section. For Method 23 of appendix A–7 sampling, the minimum sample time shall be 4 hours per test run. If the affected facility has selected the toxic equivalency standards for dioxins/furans, under §60.52c, the following procedures shall be used to determine compliance:

(i) Measure the concentration of each dioxin/furan tetra-through octa-congener emitted using EPA Reference Method 23.

(ii) For each dioxin/furan congener measured in accordance with paragraph (b)(9)(i) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in table 2 of this subpart.

(iii) Sum the products calculated in accordance with paragraph (b)(9)(ii) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(12) EPA Reference Method 26 or 26A of appendix A–8 of this part shall be used to measure HCl emissions. As an alternative, HCl CEMS may be used as specified in paragraph (c)(5) of this section.

(13) EPA Reference Method 29 of appendix A–8 of this part shall be used to measure Pb, Cd, and Hg emissions. As an alternative, Hg emissions may be measured using ASTM D6784–02 (incorporated by reference, *see* §60.17). As an alternative for Pb, Cd, and Hg, multi-metals CEMS or Hg CEMS, may be used as specified in paragraph (c)(5) of this section. 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 paragraph (c)(7) of this section.

(14) The EPA Reference Method 22 of appendix A–7 of this part shall be used to determine compliance with the fugitive ash emissions limit under §60.52c(c). The minimum observation time shall be a series of three 1-hour observations.

(c) Following the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility shall:

(1) Determine compliance with the opacity limit by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section.

(2) Except as provided in paragraphs (c)(4) and (c)(5) of this section, determine compliance with the PM, CO, and HCl emissions limits by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section. If all three performance tests over a 3-year period indicate compliance with the emissions limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for the subsequent 2 years. At a minimum, a performance test for PM, CO, and HCl shall be conducted every third year (no more than 36 months following the previous performance test). If a performance test conducted every third year indicates compliance with the emissions limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for an additional 2 years. If any performance test indicates noncompliance with the respective emissions limit, a performance test for that pollutant shall be conducted annually until all annual performance tests over a 3-year period indicate compliance with the emissions limit. The use of the bypass stack during a performance test shall invalidate the performance test.

(3) For an affected facility as defined in §60.50c(a)(1) and (2) and utilizing a large HMIWI, and in §60.50c(a)(3) and (4), determine compliance with the visible emissions limits for fugitive emissions from flyash/bottom ash storage and handling by conducting a performance test using EPA Reference Method 22 of appendix A–7 on an annual basis (no more than 12 months following the previous performance test).

(4) For an affected facility as defined in §60.50c(a)(3) and (4), determine compliance with the CO emissions limit using a CO CEMS according to paragraphs (c)(4)(i) through (c)(4)(iii) of this section:

(i) Determine compliance with the CO emissions limit using a 24-hour block average, calculated as specified in section 12.4.1 of EPA Reference Method 19 of appendix A–7 of this part.

(ii) Operate the CO CEMS in accordance with the applicable procedures under appendices B and F of this part.

(iii) 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.

(5) Facilities using CEMS to demonstrate compliance with any of the emissions limits under §60.52c shall:

(i) For an affected facility as defined in §60.50c(a)(1) and (2), determine compliance with the appropriate emissions limit(s) using a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours.

(ii) For an affected facility as defined in §60.50c(a)(3) and (4), determine compliance with the appropriate emissions limit(s) using a 24-hour block average, calculated as specified in section 12.4.1 of EPA Reference Method 19 of appendix A–7 of this part.

(iii) Operate all CEMS in accordance with the applicable procedures under appendices B and F of this part. For those CEMS for which performance specifications have not yet been promulgated (HCl, multi-metals), this option for an affected facility as defined in §60.50c(a)(3) and (4) takes effect on the date a final performance specification is published in the Federal Register or the date of approval of a site-specific monitoring plan.

(iv) For an affected facility as defined in §60.50c(a)(3) and (4), be allowed to substitute use of an HCl CEMS for the HCl annual performance test, minimum HCl sorbent flow rate, and minimum scrubber liquor pH to demonstrate compliance with the HCl emissions limit.

(v) For an affected facility as defined in §60.50c(a)(3) and (4), be allowed to substitute use of a PM CEMS for the PM annual performance test and minimum pressure drop across the wet scrubber, if applicable, to demonstrate compliance with the PM emissions limit.

(6) An affected facility as defined in §60.50c(a)(3) and (4) using a continuous automated sampling system to demonstrate compliance with the dioxin/furan emissions limits under §60.52c shall record the output of the system and analyze the sample according to EPA Reference Method 23 of appendix A–7 of this part. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to dioxin/furan from monitors is published in the Federal Register or the date of approval of a site-specific monitoring plan. The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) who elects to continuously sample dioxin/furan emissions instead of sampling and testing using EPA Reference Method 23 of appendix A–7 shall install, calibrate, maintain, and operate a continuous automated sampling system and shall comply with the requirements specified in §60.58b(p) and (q) of subpart Eb of this part.

(7) An affected facility as defined in §60.50c(a)(3) and (4) using a continuous automated sampling system to demonstrate compliance with the Hg emissions limits under §60.52c 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. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to Hg from monitors is published in the Federal Register or the date of approval of a site-specific monitoring plan. The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) who elects to continuously sample Hg emissions instead of sampling and testing using EPA Reference Method 29 of appendix A–8 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 §60.58b(p) and (q) of subpart Eb of this part.

(d) Except as provided in paragraphs (c)(4) through (c)(7) of this section, the owner or operator of an affected facility 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) Establish the appropriate maximum and minimum operating parameters, indicated in table 3 of this subpart for each control system, as site specific operating parameters during the initial performance test to determine compliance with the emission limits; and

(2) Following the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, ensure that the affected facility does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in table 3 of this subpart and measured as 3-hour rolling averages (calculated each hour as the average of the previous 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 established operating parameter(s).

(e) Except as provided in paragraph (i) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter:

(1) Operation of the affected facility 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 affected facility 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 affected facility 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 affected facility 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 shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emissions limits.

(6) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the CO emissions limit as measured by the CO CEMS specified in paragraph (c)(4) of this section shall constitute a violation of the CO emissions limit.

(7) For an affected facility as defined in §60.50c(a)(3) and (4), failure to initiate corrective action within 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 5 percent 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 1 hour. If it takes longer than 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 affected facility as defined in §60.50c(a)(3) and (4) above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in paragraph (c)(5) of this section shall constitute a violation of the applicable emissions limit.

(9) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(6) of this section shall constitute a violation of the dioxin/furan emissions limit.

(10) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the Hg emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(7) of this section shall constitute a violation of the Hg emissions limit.

(f) Except as provided in paragraph (i) of this section, for affected facilities equipped with a wet scrubber:

(1) Operation of the affected facility 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 affected facility 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 affected facility 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 affected facility 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 affected facility 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 shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emissions limits.

(7) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the CO emissions limit as measured by the CO CEMS specified in paragraph (c)(4) of this section shall constitute a violation of the CO emissions limit.

(8) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in paragraph (c)(5) of this section shall constitute a violation of the applicable emissions limit.

(9) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(6) of this section shall constitute a violation of the dioxin/furan emissions limit.

(10) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the Hg emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(7) of this section shall constitute a violation of the Hg emissions limit.

(g) Except as provided in paragraph (i) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter and a wet scrubber:

(1) Operation of the affected facility 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 affected facility 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 affected facility 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 affected facility 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 shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emissions limits.

(6) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the CO emissions limit as measured by the CO CEMS specified in paragraph (c)(4) of this section shall constitute a violation of the CO emissions limit.

(7) For an affected facility as defined in §60.50c(a)(3) and (4), failure to initiate corrective action within 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 5 percent 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 1 hour. If it takes longer than 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 affected facility as defined in §60.50c(a)(3) and (4) above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in paragraph (c)(5) of this section shall constitute a violation of the applicable emissions limit.

(9) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(6) of this section shall constitute a violation of the dioxin/furan emissions limit.

(10) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the Hg emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(7) of this section shall constitute a violation of the Hg emissions limit.

(h) The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) 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 or is required to be completed under §60.8, whichever date comes first, 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 3 operating hours) at all times. Operating parameter limits do not apply during performance tests.

(3) Except as provided in paragraph (i) of this section, 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 $NO_X$emissions limit.

(i) The owner or operator of an affected facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the affected facility is not in violation of the applicable emissions limit(s). Repeat

performance tests conducted pursuant to this paragraph shall be conducted using the identical operating parameters that indicated a violation under paragraph (e), (f), (g), or (h) of this section.

(j) The owner or operator of an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, a dry scrubber followed by a fabric filter and a wet scrubber, or selective noncatalytic reduction technology to comply with the emissions limits under §60.52c shall petition the Administrator for other site-specific operating parameters to be established during the initial performance test and continuously monitored thereafter. The owner or operator shall not conduct the initial performance test until after the petition has been approved by the Administrator.

(k) The owner or operator of an affected facility may conduct a repeat performance test at any time to establish new values for the operating parameters. The Administrator may request a repeat performance test at any time.

[62 FR 48382, Sept. 15, 1997, as amended at 65 FR 61753, Oct. 17, 2000; 74 FR 51409, Oct. 6, 2009]

## § 60.57c Monitoring requirements.

(a) Except as provided in §60.56c(c)(4) through (c)(7), the owner or operator of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in Table 3 to this subpart (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 Table 3 of this subpart at all times.

(b) The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) 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 §60.56c(h) such that the devices (or methods) measure and record values for the operating parameters at all times. Operating parameter values shall be measured and recorded at the following minimum frequencies:

(1) Maximum charge rate shall be measured continuously and recorded once each hour;

(2) Minimum secondary chamber temperature shall be measured continuously and recorded once each minute; and

(3) Minimum reagent flow rate shall be measured hourly and recorded once each hour.

(c) The owner or operator of an affected facility 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 an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, a dry scrubber followed by a fabric filter and a wet scrubber, or selective noncatalytic reduction technology to comply with the emissions limits under §60.52c shall install, calibrate (to manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters developed pursuant to §60.56c(j).

(e) The owner or operator of an affected facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the affected facility is combusting hospital waste and/or medical/infectious waste.

(f) The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) shall ensure that each HMIWI subject to the emissions limits in §60.52c undergoes an initial air pollution control device inspection that is at least as protective as the following:

(1) At a minimum, an inspection shall include the following:

(i) Inspect air pollution control device(s) for proper operation, if applicable;

(ii) Ensure proper calibration of thermocouples, sorbent feed systems, and any other monitoring equipment; and

(iii) Generally observe that the equipment is maintained in good operating condition.

(2) Within 10 operating days following an air pollution control device inspection, all necessary repairs shall be completed unless the owner or operator obtains written approval from the Administrator establishing a date whereby all necessary repairs of the designated facility shall be completed.

(g) The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) shall ensure that each HMIWI subject to the emissions limits under §60.52c undergoes an air pollution control device inspection annually (no more than 12 months following the previous annual air pollution control device inspection), as outlined in paragraphs (f)(1) and (f)(2) of this section.

(h) For affected facilities as defined in §60.50c(a)(3) and (4) 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 paragraphs (h)(1) through (h)(12) of this section for each bag leak detection system.

(1) Each triboelectric bag leak detection system may be installed, calibrated, operated, and maintained according to the “Fabric Filter Bag Leak Detection Guidance,” (EPA–454/R–98–015, September 1997). This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality Planning and Standards; Sector Policies and Programs Division; Measurement Policy Group (D–243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emissions Measurement Center Continuous Emissions Monitoring. 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 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 “Fabric Filter Bag Leak Detection Guidance.”

(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 100 percent or decreased more than 50 percent 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 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 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 1 hour. If it takes longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51412, Oct. 6, 2009]

## § 60.58c Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility shall submit notifications, as provided by §60.7. In addition, the owner or operator shall submit the following information:

(1) Prior to commencement of construction;

(i) A statement of intent to construct;

(ii) The anticipated date of commencement of construction; and

(iii) All documentation produced as a result of the siting requirements of §60.54c.

(2) Prior to initial startup;

(i) The type(s) of waste to be combusted;

(ii) The maximum design waste burning capacity;

(iii) The anticipated maximum charge rate; and

(iv) If applicable, the petition for site-specific operating parameters under §60.56c(j).

(b) The owner or operator of an affected facility shall maintain the following information (as applicable) for a period of at least 5 years:

(1) Calendar date of each record;

(2) Records of the following data:

(i) Concentrations of any pollutant listed in §60.52c or measurements of opacity as determined by the continuous emission monitoring system (if applicable);

(ii) Results of fugitive emissions (by EPA Reference Method 22) tests, if applicable;

(iii) HMIWI charge dates, times, and weights and hourly charge rates;

(iv) Fabric filter inlet temperatures during each minute of operation, as applicable;

(v) Amount and type of dioxin/furan sorbent used during each hour of operation, as applicable;

(vi) Amount and type of Hg sorbent used during each hour of operation, as applicable;

(vii) Amount and type of HCl sorbent used during each hour of operation, as applicable;

(viii) For affected facilities as defined in §60.50c(a)(3) and (4), amount and type of $NO_X$reagent used during each hour of operation, as applicable;

(ix) Secondary chamber temperatures recorded during each minute of operation;

(x) Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable;

(xi) Horsepower or amperage to the wet scrubber during each minute of operation, as applicable;

(xii) Pressure drop across the wet scrubber system during each minute of operation, as applicable,

(xiii) Temperature at the outlet from the wet scrubber during each minute of operation, as applicable;

(xiv) pH at the inlet to the wet scrubber during each minute of operation, as applicable,

(xv) Records indicating use of the bypass stack, including dates, times, and durations, and

(xvi) For affected facilities complying with §60.56c(j) and §60.57c(d), the owner or operator shall maintain all operating parameter data collected;

(xvii) For affected facilities as defined in §60.50c(a)(3) and (4), records of the annual air pollution control device inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator.

(xviii) For affected facilities as defined in §60.50c(a)(3) and (4), 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.

(xix) For affected facilities as defined in §60.50c(a)(3) and (4), concentrations of CO as determined by the continuous emissions monitoring system.

(3) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.

(4) Identification of calendar days, times and durations of malfunctions, a description of the malfunction and the corrective action taken.

(5) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.

(6) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emissions limits and/or to establish or re-establish operating parameters, as applicable, and a description, including sample calculations, of how the operating parameters were established or re-established, if applicable.

(7) All documentation produced as a result of the siting requirements of §60.54c;

(8) Records showing the names of HMIWI operators who have completed review of the information in §60.53c(h) as required by §60.53c(i), including the date of the initial review and all subsequent annual reviews;

(9) Records showing the names of the HMIWI operators who have completed the operator training requirements, including documentation of training and the dates of the training;

(10) Records showing the names of the HMIWI operators who have met the criteria for qualification under §60.53c and the dates of their qualification; and

(11) Records of calibration of any monitoring devices as required under §60.57c(a) through (d).

(c) The owner or operator of an affected facility shall submit the information specified in paragraphs (c)(1) through (c)(4) of this section no later than 60 days following the initial performance test. All reports shall be signed by the facilities manager.

(1) The initial performance test data as recorded under §60.56c(b)(1) through (b)(14), as applicable.

(2) The values for the site-specific operating parameters established pursuant to §60.56c(d), (h), or (j), as applicable, and a description, including sample calculations, of how the operating parameters were established during the initial performance test.

(3) The waste management plan as specified in §60.55c.

(4) For each affected facility as defined in §60.50c(a)(3) and (4) that uses a bag leak detection system, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in §60.57c(h).

(d) An annual report shall be submitted 1 year following the submissions of the information in paragraph (c) of this section and subsequent reports shall be submitted no more than 12 months following the previous report (once the unit is subject to permitting requirements under title V of the Clean Air Act, the owner or operator of an affected facility must submit these reports semiannually). The annual report shall include the information specified in paragraphs (d)(1) through (11) of this section. All reports shall be signed by the facilities manager.

(1) The values for the site-specific operating parameters established pursuant to §60.56c(d), (h), or (j), as applicable.

(2) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported, pursuant to §60.56c(d), (h), or (j), as applicable.

(3) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded pursuant to §60.56c(d), (h), or (j) for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(4) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported.

(5) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(6) If a performance test was conducted during the reporting period, the results of that test.

(7) If no exceedances or malfunctions were reported under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported, a statement that no exceedances occurred during the reporting period.

(8) Any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.

(9) For affected facilities as defined in §60.50c(a)(3) and (4), records of the annual air pollution control device inspection, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator.

(10) For affected facilities as defined in §60.50c(a)(3) and (4), 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.

(11) For affected facilities as defined in §60.50c(a)(3) and (4), concentrations of CO as determined by the continuous emissions monitoring system.

(e) The owner or operator of an affected facility shall submit semiannual reports containing any information recorded under paragraphs (b)(3) through (b)(5) of this section no later than 60 days following the reporting period. The first semiannual reporting period ends 6 months following the submission of information in paragraph (c) of this section. Subsequent reports shall be submitted no later than 6 calendar months following the previous report. All reports shall be signed by the facilities manager.

(f) All records specified under paragraph (b) of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Administrator.

(g) For affected facilities, as defined in §60.50c(a)(3) and (4), that choose to submit an electronic copy of stack test reports to EPA's WebFIRE data base, as of December 31, 2011, the owner or operator of an affected facility shall enter the test data into EPA's data base using the Electronic Reporting Tool located at *http://www.epa.gov/ttn/chief/ert/ert_tool.html.*

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51413, Oct. 6, 2009; 76 FR 18413, Apr. 4, 2011]

**Table 1A to Subpart Ecof Part 60—Emissions Limits for Small, Medium, and Large HMIWI at Affected Facilities as Defined in §60.50c(a)(1) and (2)**

| Pollutant | Units (7 percent oxygen, dry basis) | Emissions limits | | | Averaging time[1] | Method for demonstrating compliance[2] |
|---|---|---|---|---|---|---|
| | | HMIWI size | | | | |
| | | Small | Medium | Large | | |
| Particulate matter | Milligrams per dry standard cubic meter (grains per dry standard cubic foot) | 69 (0.03) | 34 (0.015) | 34 (0.015) | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method M 26A or 29 of appendix A–8 of part 60. |
| Carbon monoxide | Parts per million by volume | 40 | 40 | 40 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 10 or 10B of appendix A–4 of part 60. |
| Dioxins/furans | Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet) | 125 (55) or 2.3 (1.0) | 25 (11) or 0.6 (0.26) | 25 (11) or 0.6 (0.26) | 3-run average (4-hour minimum sample time per run) | EPA Reference Method 23 of appendix A–7 of part 60. |
| Hydrogen chloride | Parts per million by volume or percent reduction | 15 or 99% | 15 or 99% | 15 or 99% | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 26 or 26A of appendix A–8 of part 60. |
| Sulfur dioxide | Parts per million by volume | 55 | 55 | 55 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 6 or 6C of appendix A–4 of part 60. |
| Nitrogen oxides | Parts per million by volume | 250 | 250 | 250 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 7 or 7E of appendix A–4 of part 60. |
| Lead | Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction | 1.2 (0.52) or 70% | 0.07 (0.03) or 98% | 0.07 (0.03) or 98% | 3-run average (1-hour minimum sample time | EPA Reference Method 29 of appendix A–8 of part 60. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | per run) | |
| Cadmium | Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction | 0.16 (0.07) or 65% | 0.04 (0.02) or 90% | 0.04 (0.02) or 90% | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 29 of appendix A–8 of part 60. |
| Mercury | Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction | 0.55 (0.24) or 85% | 0.55 (0.24) or 85% | 0.55 (0.24) or 85% | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 29 of appendix A–8 of part 60. |

[1]Except as allowed under §60.56c(c) for HMIWI equipped with CEMS.

[2]Does not include CEMS and approved alternative non-EPA test methods allowed under §60.56c(b).

[74 FR 51414, Oct. 6, 2009, as amended at 76 FR 18414, Apr. 4, 2011]

**Table 1B to Subpart Ecof Part 60—Emissions Limits for Small, Medium, and Large HMIWI at Affected Facilities as Defined in §60.50c(a)(3) and (4)**

| Pollutant | Units (7 percent oxygen, dry basis) | Emissions limits | | | Averaging time[1] | Method for demonstrating compliance[2] |
|---|---|---|---|---|---|---|
| | | 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) | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method M 26A or 29 of appendix A–8 of part 60. |
| Carbon monoxide | Parts per million by volume | 20 | 1.8 | 11 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 10 or 10B of appendix A–4 of part 60. |
| Dioxins/furans | Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet) | 16 (7.0) or 0.013 (0.0057) | 0.47 (0.21) or 0.014 (0.0061) | 9.3 (4.1) or 0.035 (0.015) | 3-run average (4-hour minimum sample time per run) | EPA Reference Method 23 of appendix A–7 of part 60. |
| Hydrogen chloride | Parts per million by volume | 15 | 7.7 | 5.1 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 26 or 26A of appendix A–8 of part 60. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sulfur dioxide | Parts per million by volume | 1.4 | 1.4 | 8.1 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 6 or 6C of appendix A–4 of part 60. |
| Nitrogen oxides | Parts per million by volume | 67 | 67 | 140 | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 7 or 7E of appendix A–4 of part 60. |
| Lead | Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) | 0.31 (0.14) | 0.018 (0.0079) | 0.00069 (0.00030) | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 29 of appendix A–8 of part 60. |
| 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) | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 29 of appendix A–8 of part 60. |
| 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) | 3-run average (1-hour minimum sample time per run) | EPA Reference Method 29 of appendix A–8 of part 60. |

[1]Except as allowed under §60.56c(c) for HMIWI equipped with CEMS.

[2]Does not include CEMS and approved alternative non-EPA test methods allowed under §60.56c(b).

[74 FR 51414, Oct. 6, 2009, as amended at 76 FR 18414, Apr. 4, 2011]

**Table 2 of Subpart Ecto Part 60—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 |

**Table 3 to Subpart Ecof Part 60—Operating Parameters To Be Monitored and Minimum Measurement and Recording Frequencies**

| | Minimum frequency | | Control system | | |
|---|---|---|---|---|---|
| **Operating parameters to be monitored** | **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×hour | □ | □ | □ |
| Maximum fabric filter inlet temperature | Continuous | 1×minute | □ | | □ |
| Maximum flue gas temperature | Continuous | 1×minute | □ | □ | |
| Minimum operating parameters: | | | | | |
| Minimum secondary chamber temperature | Continuous | 1×minute | □ | □ | □ |
| Minimum dioxin/furan sorbent flow rate | Hourly | 1×hour | □ | | □ |
| Minimum HCI sorbent flow rate | Hourly | 1×hour | □ | | □ |
| Minimum mercury (Hg) sorbent flow rate | Hourly | 1×hour | □ | | □ |
| Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to wet scrubber | Continuous | 1×minute | | □ | □ |
| Minimum scrubber liquor flow rate | Continuous | 1×minute | | □ | □ |
| Minimum scrubber liquor pH | Continuous | 1×minute | | □ | □ |