

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: GENERAL PROVISIONS
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

PART 229
HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS

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SUBPART A: GENERAL PROVISIONS

Section 229.100 Abbreviations

The following abbreviations have been used in this part:

Act	Illinois Environmental Protection Act [415 ILCS 5]
Agency	Illinois Environmental Protection Agency
Board	Illinois Pollution Control Board
Btu	British thermal units
CAAPP	Clean Air Act Permit Program [415 ILCS 5/39.5]
CEMS	Continuous Emissions Monitoring System
CO	carbon monoxide
Cd	cadmium
dscf	dry standard cubic foot
dscm	dry standard cubic meter
ft ³	cubic feet
HCl	hydrogen chloride
Hg	
mercury	
HMIWI	hospital/medical/infectious waste incinerator
hr	hour
lb(s)	pound(s)
mg	milligrams
NO _x	Nitrogen Oxide
Pb	lead
PM	particulate matter
ppmv	parts per million by volume
SO ₂	Sulfur Dioxide
TEQ	toxic equivalency
USEPA	United States Environmental Protection Agency

Section 229.102 Definitions

The definitions contained in this Section apply only to the provisions of this Part. Unless otherwise defined herein and unless a different meaning of a term is clear from its context, the definitions of terms used in this Part shall have the meanings specified for those terms in 415 ILCS 5/39.5, 35 Ill. Adm. Code 201.102 or 35 Ill. Adm. Code 211.

“Batch HMIWI” means an HMIWI that is designed in such a way 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.

“Body fluids” means liquid emanating or derived from humans and limited to: blood, dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; semen and vaginal secretions.

“Bypass stack” means an alternative stack used for discharging combustion gases to the atmosphere primarily to avoid severe damage to an air pollution control device or other equipment.

“Charge” means the act of placing waste into an HMIWI for incineration.

“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 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, of which 10 percent or less of the weight 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.

“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 total emissions of any tetra through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by EPA Reference Method 23, incorporated by reference in Section 229.104(d) of this Subpart.

“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 an HMIWI exhaust stream, forming a dry powder material.

“Fabric filter” means an add-on air pollution control system that removes PM and non-vaporized metals emissions by passing flue gas through filter bags.

“Facilities manager” means the individual in charge of purchasing, maintaining, and operating an HMIWI, or the owner's or operator's representative responsible for the management of an 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 that has an organized medical staff, maintaining at least 6 inpatient beds and where the primary function of the facility 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” means any device that combusts any amount of hospital waste or medical/infectious waste.

“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, or anatomical parts that are intended for interment or cremation.

“HMIWI operator” means any person who operates, controls, or supervises the day-to-day operation of an HMIWI.

“Infectious agent” means any organism that is capable of being communicated by invasion and multiplication in body tissues and is also 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:

An HMIWI whose maximum design waste burning capacity is more than 500lbs per hour; or

A continuous or intermittent HMIWI whose maximum charge rate is more than 500lbs per hour; or

A batch HMIWI whose maximum charge rate is more than 4,000lbs per day.

“Low-level radioactive waste” means waste that 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 of 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.

“Maximum charge rate” means:

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 specified in Subpart E of this Part.

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 specified in Subpart E of this Part.

“Maximum design waste burning capacity” means:

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 rate factor, Btu/ft³/hr
- 8,500 = standard waste heating value, Btu/lb;

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 factor, lb/ft³
- 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 applicable dioxin/furan emission limit specified in Subpart E of this Part.

“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 applicable Hg emission limit specified in Subpart E of this Part.

“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. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in 40 CFR 261; household waste, as defined in 40 CFR 261.4(b)(1); and domestic sewage materials identified in 40 CFR 261.4(a)(1). For the purposes of this Part, medical/infectious waste includes:

Cultures and stocks of infectious agents and associated biologicals, including: vaccines and cultures intended for use in diagnosing, immunizing, or treating humans or animals; cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; and discarded live and attenuated vaccines;

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;

Human blood, any products derived from human blood, or anything that has been in contact with human blood in any form;

Intravenous bags and associated tubing;

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, and needles with attached tubing;

Culture dishes, regardless of the presence of infectious agents, and culture dishes and devices used to transfer, inoculate, and mix cultures;

Any type of broken or unbroken glassware that has been in contact with infectious agents;

Animal waste, including contaminated animal carcasses, body parts, 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;

Isolation wastes, including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from highly communicable diseases, or isolated animals known to be infected with highly communicable diseases; and

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

“Medium HMIWI” means:

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

A continuous or intermittent HMIWI whose maximum charge rate, as set by permit, is more than 200 lbs per hour but less than or equal to 500lbs per hour; or

A batch HMIWI whose maximum charge rate, as set by permit, is more than 1,600lbs per day but less than or equal to 4,000 lbs per day.

“Minimum dioxin/furan sorbent flow rate” means 90 percent of the highest 3hour average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the applicable dioxin/furan emission limit specified in Subpart E of this Part.

“Minimum Hg sorbent flow rate” means 90 percent of the highest 3hour average Hg sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the applicable Hg emission limit specified in Subpart E of this Part.

“Minimum HCl sorbent flow rate” means 90 percent of the highest 3hour average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the applicable HCl emission limit specified in Subpart E of this Part.

“Minimum horsepower” or “minimum amperage” means 90 percent of the highest 3hour 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 specified in Subpart E of this Part.

“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 applicable PM emission limit specified in this Subpart E of this Part.

“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 the applicable emission limits specified in Subpart E of this Part.

“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 applicable HCl emission limit specified in Subpart E of this Part.

“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 applicable PM, CO, and dioxin/furan emission limits specified in Subpart E of this Part.

“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 an HMIWI.

“Operation” means any period during which waste is combusted in an HMIWI, excluding periods of startup or shutdown.

“Pathological waste” means waste material consisting of only human or animal remains, anatomical parts, tissue, and the bags or containers used to collect and transport the waste material and associated 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.

“Rural HMIWI” means any HMIWI identified in Section 229.110(a) of this Part, that is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area, as defined in OMB Bulletin No. 93-17, incorporated by reference at Section 229.104(b) of this Part, meets the criteria specified in the definition of “small HMIWI” and burns less than 2,000 lbs per week of hospital waste and medical/infectious waste (except the 2,000 lbs per week limitation does not apply during performance testing).

“Secondary chamber” means that component of an 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.

“Small HMIWI” means:

An HMIWI whose maximum design waste burning capacity is less than or equal to 200 lbs per hour; or

A continuous or intermittent HMIWI whose maximum charge rate, as set by permit, is less than or equal to 200 lbs per hour; or

A batch HMIWI, whose maximum charge rate, as set by permit, is less than or equal to 1,600 lbs per day.

“Startup” means the period of time between the activation of an HMIWI and the first charge of waste to the unit. For batch HMIWI, startup means the period of time between activation of an HMIWI and ignition of the waste.

“Wet scrubber” means an add-on air pollution control device that utilizes either an alkaline or some other type of scrubbing liquor to collect pollutants and/or neutralize acid gases.

Section 229.104 Incorporations by Reference

The following materials are incorporated in this Part by reference. These incorporations by reference do not include any later amendments or editions.

- a) “An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities,” American Society for Healthcare Environmental Services, 840 North Lake Shore Drive, Chicago, Illinois, 60611 (1993).
- b) "Revised Statistical Definitions for Metropolitan Areas," OMB Bulletin No. 9317, Office of Management and Budget, Washington, D.C. (June 30, 1993).
- c) 40 CFR 60.8.
- d) 40 CFR 60, Appendix A, Methods 1, 2, 3, 3A, 5, 9, 10, 10B, 23, 26, 26A, 29.
- e) 40 CFR 60, Appendices B and F.

SUBPART B: APPLICABILITY

Section 229.110 General Applicability

- a) This Part applies to all HMIWIs for which construction commenced either on or before June 20, 1996, except as provided for in subsections (b), (c), (d) and (e) of this Section and Section 229.112 of this Subpart.
- b) An HMIWI otherwise subject to the emission limits in this Part is only subject to the recordkeeping requirements set forth in Section 229.182(b), (f) and (g) of this Part during those periods when it combusts only pathological waste, low-level radioactive waste, or chemotherapeutic waste, provided the owner or operator of the HMIWI notifies the Agency of its intention to operate pursuant to this operating scenario in its CAAPP application submitted in accordance with either Section 229.115(b)(1), Subpart D of this Part, or Section 39.5 of the Act.
- c) An HMIWI that combusts only pathological waste, low-level radioactive waste, or chemotherapeutic waste is subject to only the recordkeeping requirements set forth in Section 229.182(c), (f) and (g) of this Part, provided that the owner or operator of an HMIWI provides, by December 15, 1999, both the Agency and the USEPA with a written certification of its status as an HMIWI burning only the wastes listed in this subsection.

- d) A co-fired combustor is subject only to the recordkeeping requirements set forth in Sections 229.182(d), (f) and (g) of this Part, provided that the owner or operator of the combustor is subject to a permit condition limiting its fuel feed stream to co-fired combustor status, provides, by December 15, 1999, both the Agency and USEPA with a written certification of its status as a co-fired combustor including an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or waste combusted at the facility.
- e) Any hospital that does not operate an HMIWI but that sends any of its hospital waste or medical/infectious waste to an off-site HMIWI is subject only to the waste management plan provisions set forth at Section 229.178 of this Part.

Section 229.112 Exemptions

Notwithstanding other provisions of this Part, the following emission units are exempt from the requirements of this Part:

- a) Any combustor required to have a permit under Section 3005 of the Solid Waste Disposal Act, 42 U.S.C. 6925;
- b) Any municipal waste combustor that meets the applicability provisions for municipal waste combustors under Subparts Cb, Ea or Eb of 40 CFR 60;
- c) Any pyrolysis unit (i.e., a unit that uses endothermic gasification to treat hospital waste or medical/infectious waste in order to render such waste harmless);
- d) Any cement kiln firing hospital waste or medical/infectious waste; or
- e) Any HMIWI subject to the *Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996* contained in Subpart Ec of 40 CFR 60.50c.

SUBPART C: COMPLIANCE SCHEDULES

Section 229.115 Compliance Schedules for HMIWIs That Will Continue to Operate

- a) Except as provided in subsection (b) of this Section and unless another date is specified in the provisions of this Part, all owners or operators of HMIWIs shall be in compliance with all of the provisions of this Part by September 15, 2000.
- b) Except as provided in subsection (c) of this Section, the owner or operator of an HMIWI may have up to September 15, 2002, to come into compliance with this Part. To avail themselves of this extended compliance timeframe, the owner or operator of an HMIWI shall:
 - 1) Submit its CAAPP application to the Agency, on or before November 15, 1999, requesting an extended compliance schedule, pursuant to Section 39.5(5)(d) of the Act, [415 ILCS 5/39.5(5)(d)]. This compliance schedule shall include documentation supporting the need for an extension, a final control plan for the HMIWI and incremental steps to be taken toward compliance with this Part that, at a minimum, meet the increments of progress specified in subsection (b)(2) of this Section;

- 2) Meet the following increments of progress by the dates indicated:
 - A) Finalize all contracts for the purchase of either pollution control equipment, process modification or control systems by February 29, 2000;
 - B) Commence the implementation of either the process modifications or the necessary construction or installation of air pollution control devices for the HMIWI by November 30, 2000;
 - C) Complete either the process modifications or the installation or construction of the new air pollution control equipment by August 31, 2001;
 - D) Perform initial startup of the retrofitted HMIWI by January 15, 2002; and
 - E) Complete the initial performance test in accordance with Section 229.142 of this Part within 180 days after initial startup.
- c) Any owner or operator of an HMIWI that fails to demonstrate compliance with this Part by September 15, 2002, shall cease operation of the HMIWI until compliance with the provisions of this Part is achieved.
- d) Notwithstanding subsection (b) of this Section, all owners or operators of HMIWIs shall be in full compliance with all of the HMIWI operator provisions of Subpart J of this Part by September 15, 2000.

Section 229.116 Compliance Schedules for HMIWIs That Will Shut Down

All owners or operators of HMIWIs that intend to permanently shut down their HMIWI as a means of complying with this Part shall:

- a) Provide the Agency with written notice of their intention to permanently shut down their HMIWI on or before November 15, 1999; and
- b) Take the following affirmative steps to demonstrate that the HMIWI has been rendered permanently inoperable by September 15, 2000:
 - 1) Weld the primary chamber door shut;
 - 2) Dismantle the HMIWI; or
 - 3) Other means that reasonably demonstrate that the HMIWI is no longer functional.

SUBPART D: CAAPP PERMIT REQUIREMENTS

Section 229.120 CAAPP Permit Requirements

- a) All HMIWIs subject to the emissions limits in this Part shall operate pursuant to a CAAPP permit by September 15, 2000.
- b) For any HMIWI subject to the emission limits in this Part that is first required to obtain a CAAPP permit because it is subject to the emission limits in this Part, the owner or operator

shall submit a complete application for a CAAPP permit by September 15, 2000, except as provided for in Section 229.115(b)(1) of this Part.

- c) Upon submittal of a timely and complete CAAPP application, the owner or operator of an HMIWI shall not be in violation of the requirement, specified in subsection (a) of this Section, to have a CAAPP permit, to the extent provided in Section 39.5(5)(h) of the Act [415 ILCS 5/39.5(5)(h)].
- d) For any HMIWI that currently has a CAAPP permit, the following conditions apply:
 - 1) If the CAAPP permit has 3 or more years remaining on the permit term, the owner or operator of an HMIWI shall apply for revision to the CAAPP permit to incorporate the applicable requirements of this Part on or before November 15, 1999; or
 - 2) If the CAAPP permit has less than 3 years remaining on the permit term, the CAAPP permit shall be revised to incorporate the applicable requirements of this Part, upon renewal of the permit.

SUBPART E: EMISSION LIMITS

Section 229.125 Emission Limits for Small, Medium, and Large HMIWIs

- a) The emission limits in this Section shall apply to HMIWIs identified in Section 229.110(a) at all times, except as provided in Section 229.110(b) of this Part, Section 229.126 of this Subpart and Subpart F of this Part.
- b) The emission limits for small, medium, and large HMIWIs are as follows:

		HMIWI EMISSION LIMITS		
Pollutant	Units (7% oxygen, dry basis)	Small	Medium	Large
PM	mg per dscm (grains per dscf)	115 (0.05)	69 (0.03)	34 (0.015)
CO	ppmv	40	40	40
Dioxins/ Furans	Nanograms per dscm, total dioxins/furans (grains per billion dscf), or nanograms per dscm TEQ (grains per billion dscf)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)
HCl	ppmv or percent reduction	100 or 93%	100 or 93%	100 or 93%
SO ₂	ppmv	55	55	55
NO _x	ppmv	250	250	250
Pb	mg per dscm (grains per thousand dscf) or percent reduction	1.2 (0.52) or 70%	1.2 (0.52) or 70%	1.2 (0.52) or 70%
Cd	mg per dscm (grains per thousand dscf) or percent reduction	0.16 (0.07) or 65%	0.16 (0.07) or 65%	0.16 (0.07) or 65%

Hg	mg per dscm (grains per thousand dscf) or percent reduction	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%
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- c) No owner or operator of a small, medium, or large HMIWI shall cause or allow any emissions that cause greater than 10 percent opacity, as measured on a 6 minute block average, according to Method 9, 40 CFR 60, Appendix A, incorporated by reference at Section 229.104(d) of this Part, from any stack used by an HMIWI.

Section 229.126 Emission Limits For Rural HMIWIs

- a) Notwithstanding the emission limits set out in Section 229.125 of this Part, any rural HMIWI shall comply with the emission limits set out in subsection (b) of this Section. The emission limits under this Section shall apply at all times, except as provided for in Section 229.110(b) and Subpart F of this Part.
- b) The emission limits for rural HMIWI are as follows:

Pollutant	Units (7% oxygen, dry basis)	EMISSION LIMITS
PM	mg per dscm (grains per dscf)	197 (0.086)
CO	ppmv	40
Dioxin/ Furans	nanograms per dscm total dioxins/furans (grains per billion dscf), or nanograms per dscm TEQ (grains per billion dscf)	800 (350) or 15 (6.6)
HCl	ppmv	3100
SO ₂	ppmv	55
NO _x	ppmv	250
Pb	mg per dscm (grains per thousand dscf)	10 (4.4)
Cd	mg per dscm (grains per thousand dscf)	4 (1.7)
Hg	mg per dscm (grains per thousand dscf)	7.5 (3.3)

- c) No owner or operator of a rural HMIWI shall cause or allow any emissions that cause greater than 10 percent opacity, as measured on a 6 minute block average, according to Method 9, 40 CFR Part 60, Appendix A, incorporated by reference at Section 229.104(d) of this Part, from any stack used by an HMIWI.

SUBPART F: EXCEPTIONS FROM EMISSION LIMITS

Section 229.130 Operation During Periods of Startup, Shutdown, or Malfunction

- a) The emission limits specified in Subpart E of this Part do not apply to an HMIWI during periods of startup, shutdown or malfunction, if the requirements provided in subsections (b), (c) and (d) of this Section are met.
- b) No waste shall be charged to an HMIWI during periods of startup, shutdown or malfunction.

- c) The shutdown of any HMIWI shall proceed according to the following requirements:
 - 1) For continuous HMIWIs, shutdown may commence no less than 2 hours after the last charge to an HMIWI;
 - 2) For intermittent HMIWIs, shutdown may commence no less than 4 hours after the last charge to an HMIWI; and
 - 3) For batch HMIWIs, shutdown may commence no less than 5 hours after the high air phase of combustion has been completed.
- d) During periods of malfunction, the owner or operator of an HMIWI shall do all of the following:
 - 1) Take all reasonable steps to ensure that an HMIWI operates within the parameters established for that HMIWI and to minimize excess emissions;
 - 2) Continue monitoring all applicable parameters; and
 - 3) Take appropriate corrective actions prior to resuming the charging of any waste to an HMIWI.

SUBPART G: METHODS AND PROCEDURES FOR PERFORMANCE TESTING

Section 229.140 Methods and Procedures for Performance Testing

This Section applies during all performance tests.

- a) The owner or operator of an HMIWI shall provide, or cause to be provided, the facilities for emission testing specified in 40 CFR 60.8(e), incorporated by reference at Section 229.104(c) of this Part.
- b) When conducting a performance test for an HMIWI, the owner or operator shall:
 - 1) Test an HMIWI at the waste charging rate specified in its permit or, if no permit has been issued, in its permit application;
 - 2) Burn representative waste streams that are typically combusted in that HMIWI;
 - 3) Conduct testing during periods that are inclusive of maximum emissions of the HMIWI and not during periods of startup, malfunction, or shutdown; and
 - 4) Weigh the amount of waste combusted for each run of the performance test before charging the waste to an HMIWI to within 1.0 percent accuracy.
- c) The owner or operator of an HMIWI shall submit a test plan to the Agency at least 45 days before conducting a performance test pursuant to this Part. Performance test plans shall include the following:
 - 1) The proposed date of the performance test;

- 2) A roster of testing personnel, which provides information concerning their testing experience;
- 3) A description of the specific conditions under which the test will be performed, including, at a minimum:
 - A) Why these conditions will be representative of the operation and include maximum emissions of the HMIWI; and
 - B) The means by which the operating parameter values will be determined;
- 4) A technical description of the HMIWI being tested;
- 5) The parameters and pollutants that will be monitored during the performance test; and
- 6) The quality assurance procedures that will be followed during the performance test.
- d) The owner or operator of an HMIWI shall give the Agency 5 days written notice prior to actually conducting any performance testing required by the provisions of this Part.
- e) Testing conducted pursuant to this Part shall be according to the procedures and test methods specified for the measurement of each pollutant in Appendix C of this Part.
- f) Notwithstanding subsection (e) of this Section, alternate testing methods may be used if approved by the Agency in a permit and approved by USEPA.
- g) Any use of a bypass stack during a performance test shall invalidate the results of that run.

SUBPART H: COMPLIANCE REQUIREMENTS

Section 229.142 Initial Performance Testing and Establishment of Operating Parameters

The owner or operator of an HMIWI subject to the emissions limits under this Part shall comply with the following requirements:

- a) Except as provided in Section 229.115(b)(2)(E) of this Part, conduct an initial performance test on their HMIWI by September 15, 2000;
- b) Except as provided in subsection (c) of this Section, in the initial performance test, test for all pollutants limited pursuant to Subpart E of this Part;
- c) During the initial performance test, rural HMIWIs are not required to test for HCl, Pb or Cd;
- d) If an HMIWI is 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, establish the appropriate maximum and minimum operating parameter values indicated in Appendix B of this Part for the relevant control system during the initial performance test, provided that the performance test demonstrates compliance with the emission limits specified in Section 229.125 of this Part;
- e) If air pollution control equipment other than a dry scrubber followed by a fabric filter, a wet scrubber, or dry scrubber followed by a fabric filter and a wet scrubber is used to comply with

the emission limits under Section 229.125 of this Part, the initial performance test may not be conducted until site-specific operating parameters that will be monitored to demonstrate compliance with this Part have been established by the Agency in a construction permit and approved by USEPA.

- f) For rural HMIWI, establish the maximum charge rate and minimum secondary chamber temperature as site-specific parameters during the initial performance test, provided that the performance test demonstrates that the HMIWI is in compliance with the emission limits specified in Section 229.126 of this Part.

Section 229.144 Subsequent Performance Testing for AllHMIWIs

- a) The owner or operator of an HMIWI may conduct a repeat performance test at any time to establish new site specific operating values for the HMIWI. Such new site specific operating parameter values may not be relied upon until approved by the Agency as a permit condition.
- b) The Agency or the USEPA may request that the owner or operator of an HMIWI conduct a new performance test at any time.

Section 229.146 Annual Testing for Opacity

Following the date on which the initial performance test is completed, as required by Section 229.142 of this Section, the owners or operators of allHMIWIs shall conduct an annual opacity test, in accordance with Section 229.140 of this Part, by September 15 of each year.

Section 229.148 Annual Performance Testing for Small, Medium and LargeHMIWIs

Following the date on which the initial performance test is completed, as required by Section 229.142 of this Part, all owners or operators of small, medium, or largeHMIWIs shall conduct an annual performance test, by September 15 of each year to determine compliance with the PM, CO andHCl emission limits specified in Section 229.125(b) of this Part, using the applicable test procedures and methods specified in Section 229.140 of this Part.

- a) If all 3 annual performance tests over a 3-year period indicate compliance with the emission limits for PM, CO, or HCl specified in Section 229.125(b) of this Part, the owner or operator of an HMIWI may forego a performance test for that pollutant during the next 2 years. If the next performance test conducted every third year indicates compliance with the emission limits for PM, CO, or HCl specified in Section 229.125(b) of this Part, the owner or operator of an HMIWI may forego a performance test for that pollutant for an additional 2 years from the date of the previous performance test.
- b) If any performance test indicates noncompliance with the respective emission limit, the owner or operator of an HMIWI shall conduct a performance test for that pollutant annually until all annual performance tests over a 3-year period indicate compliance with the respective emission limits.

Section 229.150 Compliance with Operating Parameter Values

- a) Following the date on which the initial performance test is completed, as provided in Section 229.142 of this Part, an HMIWI, using a dry scrubber followed by a fabric filter, a wet scrubber, or dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits of this Part, shall not operate above any of the applicable maximum or below any of the applicable minimum operating parameter values specified in Appendix B of this Part. All operating parameters shall be measured at all times, except during periods of startup, shutdown, and malfunction (calculated each hour as a 3-hour rolling average of the previous 3 operating hours). For batch HMIWIs, the charge rate shall be measured on a per batch basis.
- b) For HMIWIs using air pollution control equipment other than a dry scrubber followed by a fabric filter, a wet scrubber, or dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits under Section 229.125 of this Part, following the date on which the initial performance test is completed, as provided in Section 229.142 of this Part, an HMIWI shall not operate above any applicable maximum or below any applicable minimum operating parameter values established in its CAAPP permit.
- c) Operating parameter limits do not apply during performance tests.

Section 229.152 Compliance Requirements for HMIWIs using CEMS

The owner or operator of an HMIWI may use a CEMS to demonstrate compliance with any of the emission limits under Section 229.125(b) of this Part, if provided for in its permit. Any HMIWI that is allowed to use a CEMS to demonstrate compliance with the emission limits of this Part shall:

- a) Determine compliance with the applicable emission limits using a 12 hour rolling average, calculated each hour as the average of the previous 12 operating hours, not including startup, shutdown, or malfunction; and
- b) Operate all CEMS in accordance with the applicable procedures under Appendices B and F of 40 CFR 60, incorporated by reference at Section 229.104(e) of this Part.

Section 229.154 Violations by HMIWIs Equipped with a Dry Scrubber Followed by a Fabric Filter

Except as provided in Section 229.164 of this Subpart, for an HMIWI equipped with a dry scrubber followed by a fabric filter:

- a) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) shall be a violation of the CO emission limit;
- b) Simultaneous operation of an 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) shall be a violation of the dioxin furan emission limit;
- c) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum HCl sorbent flow rate (each measured on a 3-hour rolling average) shall be a violation of the HCl emission limit;

- d) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) shall be a violation of the Hg emission limit; or
- e) Use of the bypass stack (except during startup, shutdown or malfunction) is a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

Section 229.156 Violations by HMIWIs Equipped with a Wet Scrubber

Except as provided in Section 229.164 of this Subpart, for an HMIWI equipped with a wet scrubber:

- a) Simultaneous operation of an 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) is a violation of the PM emission limit;
- b) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) is a violation of the CO emission limit;
- c) Simultaneous operation of an 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) is a violation of the dioxin/furan emission limit;
- d) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) is a violation of the HCl emission limit;
- e) Simultaneous operation of an HMIWI above the maximum flue gas temperature and above the maximum charge rate (each measured on a 3-hour rolling average) is a violation of the Hg emission limit; or
- f) Use of the bypass stack (except during startup, shutdown, or malfunction) is a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

Section 229.158 Violations by HMIWIs Equipped with a Dry Scrubber Followed by a Fabric Filter and a Wet Scrubber

Except as provided in Section 229.164 of this Subpart, for an HMIWI equipped with a dry scrubber followed by a fabric filter and a wet scrubber:

- a) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) is a violation of the CO emission limit;
- b) Simultaneous operation of an 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) is a violation of the dioxin/furan emission limit;

- c) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) is a violation of the HCl emission limit;
- d) Simultaneous operation of an HMIWI above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) is a violation of the Hg emission limit; or
- e) Use of the bypass stack (except during startup, shutdown, or malfunction) is a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

Section 229.160 Compliance Requirements for Rural HMIWIs

- a) Following the date on which the initial performance test is completed or is required to be completed under Section 229.142 of this Subpart, whichever date comes first, the owners or operators of a rural HMIWI shall not operate their HMIWI either above the maximum charge rate or below the minimum secondary chamber temperature at all times, except during periods of startup or shutdown (calculated each hour as a 3-hour rolling average of the previous 3 operating hours).
- b) Except as provided in Section 229.164 of this Subpart, the simultaneous operation of a rural HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (calculated as a 3-hour rolling average) shall constitute a violation of the PM, CO and dioxin/furan emission limits.

Section 229.162 Inspection Requirements for Rural HMIWIs

- a) Each owner or operator of a rural HMIWI shall inspect the HMIWI according to the following schedule:
 - 1) An initial inspection shall be conducted by September 15, 2000; and
 - 2) An annual inspection shall be conducted by September 15 of each year thereafter.
- b) Each inspection shall be conducted to ensure the proper operation of the rural HMIWI and, at a minimum, shall consist of the following steps:
 - 1) An inspection of all burners, pilot assemblies, and pilot sensing devices, cleaning the pilot flame sensor, as necessary;
 - 2) An inspection of the primary and secondary chamber combustion air flow, adjusting, as necessary;
 - 3) An inspection of the hinges and door latches, lubricating, as necessary;
 - 4) An inspection of dampers, fans, and blowers;
 - 5) An inspection of the HMIWI door and door gaskets;
 - 6) An inspection of all HMIWI motors;

- 7) An inspection of the primary chamber refractory lining, cleaning, repairing or replacing the lining, as necessary;
 - 8) An inspection of the incinerator shell for corrosion or hot spots;
 - 9) An inspection of the secondary/tertiary chamber and stack, cleaning as necessary;
 - 10) Where applicable, an inspection of the mechanical loader, including limit switches;
 - 11) A visual inspection of the waste bed (grates), repairing or sealing, as necessary;
 - 12) Where applicable, an inspection of air pollution control devices to ensure their proper operation;
 - 13) Where applicable, an inspection of the waste heat boiler systems;
 - 14) An inspection of all bypass stack components;
 - 15) Calibration of thermocouples, sorbent feed systems and monitoring equipment; and
 - 16) A general inspection of all equipment to ensure that it is maintained in good operating condition.
- c) The owner or operator of a rural HMIWI shall document that, during the burn cycle immediately following the inspection required by this Section, the HMIWI is operating properly and make any necessary adjustments.
- d) All maintenance, adjustments, or repairs identified during the inspection required under this Section shall be completed within 10 days after the inspection. The owner or operator of an HMIWI may have a longer period of time in which to complete any repairs identified as a result of the inspection required by this Section, provided that it makes this request to the Agency in writing, and the Agency approves the owner or operator of an HMIWI's request in writing.

Section 229.164 Optional Performance Testing to Address Actual or Potential Violations

The owner or operator of an HMIWI may conduct another performance test within 30 days after exceeding an applicable operating parameter value in order to demonstrate that an HMIWI is not in violation of the applicable emission limits. In addition to the applicable performance testing provisions under this Part, any performance test conducted pursuant to this Section shall meet the following conditions:

- a) All tests shall use the same operating parameter values that indicated a violation under Section 229.154, 229.156, 229.158 or 229.160 of this Subpart;
- b) The owner or operator of an HMIWI shall notify the Agency in writing at least 21 days before the date of any optional performance test;
- c) The owner or operator of an HMIWI shall notify the Agency in writing of its intent to proceed with the optional performance test 5 days prior to conducting the test; and

- d) The owner or operator of an HMIWI shall conduct the optional performance test using the same approved performance test plan that was used for the performance test in which the violated operating parameter values were established.

SUBPART I: MONITORING REQUIREMENTS

Section 229.166 Monitoring Requirements for Small, Medium, and Large HMIWIs

- a) Once the initial performance test required by Section 229.142 of this Part has been performed, and the site-specific minimum and maximum operating parameter values have been established, the owner or operator of a small, medium or large HMIWI shall continuously monitor those parameters.
- b) The owner or operator of a small, medium or large HMIWI shall comply with the following monitoring requirements:
 - 1) Install, calibrate according to manufacturer's specifications, maintain, and operate devices or establish methods for monitoring the applicable maximum and minimum operating parameters specified in Appendix B of this Part such that these devices or methods measure and record values for these operating parameters at the frequencies indicated in Appendix B of this Part at all times, except during periods of startup and shutdown;
 - 2) Install, calibrate according to manufacturer's specifications, maintain, and operate a device or establish a method for identifying the use of the bypass stack, including date, time, and duration of use;
 - 3) If control equipment 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 is used to comply with the emission limits under Section 229.125(b) of this Part, install, calibrate according to manufacturer's specifications, maintain, and operate the equipment necessary to monitor the site-specific operating parameters developed and approved pursuant to Section 229.142 (e) of this Part; and
 - 4) Record monitoring data at all times during HMIWI operation, except during the periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be recorded for 75 percent of the operating hours per day and for 90 percent of the operating days per calendar quarter that an HMIWI is combusting hospital waste or medical/infectious waste.

Section 229.168 Monitoring Requirements for Rural HMIWIs

The owner or operator of each rural HMIWI shall comply with the following monitoring requirements:

- a) Install, calibrate according to manufacturer's specifications, maintain, and operate a device measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which shall be recorded, at a minimum, once every minute of operation;
- b) Install, calibrate according to manufacturer's specifications, maintain, and operate a device that automatically measures and records the date, time, and weight of each charge fed into an HMIWI; and

- c) Record 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 recorded for 75 percent of the operating hours per day and for 90 percent of the operating hours per calendar quarter that an HMIWI is combusting hospital waste or medical/infectious waste.

SUBPART J: REQUIREMENTS FOR HMIWI OPERATORS

Section 229.170 Operator Training and Qualification Requirements

- a) No HMIWI shall be operated unless a trained and qualified HMIWI operator, as specified in this Section, is available on-site to operate or supervise the operation of the HMIWI.
- b) To become a trained and qualified operator, a person shall complete a training program that, at a minimum, meets the criteria specified in subsection (c) of this Section, pass the examination administered in accordance with subsection (c)(2) of this Section and have either 6 months experience as an HMIWI operator or have completed 2 burn cycles under the observation of 2 trained and qualified HMIWI operators.
- c) An operator training program shall satisfy all of the following criteria:
 - 1) Consist of at least 24 hours of training covering the following subjects:
 - A) Work safety procedures;
 - B) Pre-startup procedures;
 - C) Environmental concerns, including pathogen destruction and types of emissions;
 - D) Basic combustion principles, including combustion byproducts;
 - E) Instruction in the proper operation of the same type of incinerator that will be used by the operator, including proper startup, waste charging, and shutdown procedures;
 - F) Combustion controls and monitoring;
 - G) Operation of air pollution control equipment and factors affecting performance;
 - H) Methods for monitoring pollutants, both by CEMS and by monitoring of HMIWI and air pollution control device operating parameters, and monitoring instrument calibration procedures;
 - I) Inspection and maintenance of an HMIWI, air pollution control equipment, and CEMS;
 - J) Corrective measures to remedy malfunctions and conditions that may lead to malfunction;

- K) Characteristics of and proper handling procedures for bottom and fly ash;
 - L) Recordkeeping procedures; and
 - M) Applicable Federal, State, and local regulations.
- 2) Administer an examination designed by the course instructor; and
- 3) Provide reference materials covering all of the course topics specified in subsection (c)(1) of this Section.
- d) Operator qualification is valid from the date on which the examination specified in subsection (c)(2) of this Section is passed, or the completion of the experience requirements set forth in subsection (b) of this Section, whichever is later.
- e) In order for an operator that has been qualified in accordance with subsection (b) of this Section to maintain the necessary qualification status, the operator shall:
 - 1) Complete and pass an annual review course of at least 4 hours in length that, at a minimum, covers the following subjects:
 - A) An update of applicable regulations;
 - B) Proper incinerator operation, including startup and shutdown procedures;
 - C) Proper incinerator inspection and maintenance;
 - D) Responses to malfunctions and conditions that may lead to malfunction; and
 - E) A discussion of operating problems encountered by attendees.
 - 2) If an operator fails to either take or to complete and pass the annual review course, the operator's qualification will lapse.
 - 3) If the operator's qualification lapses for less than 3 years, qualification may be reinstated by taking and passing the annual review course, as provided under subsection (e)(1) of this Section.
 - 4) If there is a 3 year or greater lapse in an operator's qualification, then the operator shall take and pass an operator training course, as provided for under subsection (c) of this Section, in order to reinstate the qualification.

Section 229.172 Documentation To Be Maintained On-Site for Employees Operating HMIWIs

- a) The owner or operator of an HMIWI shall maintain the following information on-site for the use and reference of HMIWI operators:
 - 1) A summary of the applicable requirements under this Part;
 - 2) A description of basic combustion theory applicable to HMIWIs;

- 3) Procedures for receiving, handling, and charging waste;
 - 4) Procedures for startup and shutdown of the HMIWI;
 - 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 Part;
 - 7) Procedures for responding to periodic malfunction or conditions that may lead to malfunction;
 - 8) Procedures for monitoring HMIWI emissions;
 - 9) Recordkeeping and reporting procedures; and
 - 10) Procedures for handling ash.
- b) The owner or operator of an HMIWI shall establish a program for the annual review of all of the information listed under subsection (a) of this Section by all employees that operate an HMIWI.
- 1) The initial review of the information listed in subsection (a) of this Section shall be conducted by September 15, 2000, or prior to assuming responsibilities for operating an HMIWI, whichever is later;
 - 2) Subsequent reviews of the information contained in subsection (a) of this Section shall be conducted annually.
- c) The information identified in subsection (a) of this Section shall be kept in a location readily accessible to all HMIWI operators.

SUBPART K: WASTE MANAGEMENT PLAN REQUIREMENTS

Section 229.176 Waste Management Plan Requirements for Hospitals Using On-Site Incinerators

- a) The owner or operator of a hospital subject to the requirements in this Part shall submit to the Agency, in accordance with Section 229.184(b) of this Part, a waste management plan. Such plans shall outline technically and economically feasible policies and practices for reducing the amount and toxicity of hospital and medical/infectious waste incinerated at the hospital. The waste management plan shall include the following components:
- 1) The name and location of the facility;
 - 2) A written policy statement setting forth management support for waste management and implementation of the plan;
 - 3) A statement of goals for reducing the volume and toxicity of waste, expressed numerically where feasible;
 - 4) Identification of the staff responsible for development and implementation of the plan, as well as a description of their roles and responsibilities;

- 5) A description of communication and education programs to make employees aware of the waste management program and their responsibilities;
 - 6) A summary of existing waste management policies and practices;
 - 7) Identification of technically and economically feasible waste management policies and practices to be implemented and, where practical, a schedule for the implementation of the selected measures; and
 - 8) Procedures for tracking implementation of the plan and progress toward achieving the goals.
- b) Prior to the development of the waste management plan, the hospital shall assess:
- 1) Current waste management practices
 - 2) All of the available data that it has collected on the types, quantities, and sources of its waste;
 - 3) Technical information on alternative waste management practices, such as the American Hospital Association publication entitled "An Ounce of Prevention: Waste Management Strategies for Health Care Facilities," incorporated by reference at Section 229.104(a) of this Part; and
 - 4) The feasibility of implementing additional waste management policies and practices, taking into account such considerations as:
 - A) The effectiveness of existing policies and practices;
 - B) The costs of additional measures;
 - C) The potential effects on patient care and worker safety;
 - D) The environmental benefits and savings;
 - E) The recycling options available in the area; and
 - F) The availability of products or equipment needed to implement alternative measures.
- c) The following measures, at a minimum, shall be considered when evaluating alternative waste management practices and developing waste management policies and procedures:
- 1) Segregating waste streams;
 - 2) Phasing out the use of products containing toxic materials;
 - 3) Reusing products and equipment;
 - 4) Reducing the use of packaging and disposable items;

- 5) Collecting recyclable materials; and
- 6) Improving inventory control, training and housekeeping practices.
- d) Any waste management plan that has been developed by a hospital subject to the requirements of this Part prior to May 15, 1999, may be incorporated into the waste management plan required by this Section for that hospital, to the extent that such a plan is consistent with the requirements of this Section.
- e) The owner or operator of each affected hospital shall submit a waste management plan to the Agency at the same time site-specific operating parameters are reported, as specified in Section 229.184(b) of this Part.
- f) The waste management plan shall be updated every 5 years to coincide with either the issuance or renewal of the facility's CAAPP permit.
- g) The owner or operator of each affected hospital shall submit a waste management progress report to the Agency annually, along with the annual emissions report required by 35 Ill. Adm. Code 201.302 and 254. The progress report shall include the following elements:
 - 1) A description of progress made during the previous calendar year toward meeting the goals established in the plan;
 - 2) A summary of the waste management practices that were implemented; and
 - 3) Any amendments to the plan along with a brief explanation of the need for the amendments.
- h) Upon written request, the affected hospital shall make the waste management plan and annual progress reports available for public review during normal business hours.

Section 229.178 Waste Management Plan Requirements for Hospitals Transporting Waste Off-Site to an HMIWI

- a) By September 15, 2000, the owner or operator of any hospital that transfers hospital or medical/infectious waste off-site to an HMIWI shall conduct an assessment of its current waste management program and consider additional technically and economically feasible measures for reducing the volume and toxicity of waste to be incinerated.
- b) In identifying additional technically and economically feasible waste management practices, the owner or operator shall consider:
 - 1) Segregating waste streams;
 - 2) Phasing out the use of products containing toxic materials;
 - 3) Reusing products and equipment;
 - 4) Reducing the use of packaging and disposable items;

- 5) Collecting recyclable materials; and
- 6) Improving inventory control, training and housekeeping practices.
- c) Within 1 year after the assessment conducted pursuant to subsection (a) of this Section, and annually thereafter, affected hospitals shall submit a waste management progress report to the Agency. The progress report shall summarize any waste management policies and practices that were implemented in the previous calendar year.

Section 229.180 Waste Management Requirements for HMIWIs Accepting Waste Generated Off-Site

- a) The owner or operator of any HMIWI that accepts hospital waste or medical/infectious waste generated off-site shall:
 - 1) Provide hospital, medical or infectious waste customers with written information at least once a year concerning the availability of waste management practices for reducing the volume and toxicity of waste to be incinerated; and
 - 2) Submit a waste management plan to the Agency, in accordance with Section 229.184(b) of this Part, that outlines the efforts that will be undertaken to distribute information as specified in subsection (a)(1) of this Section and identifies the information that will be distributed.
- b) Paper or electronic copies of the materials disseminated under this Section shall be made available to the Agency upon written request.

Section 229.181 Waste Management Plan Requirements for Other HMIWIs

The owner or operator of an HMIWI that is subject to emission limits in Subpart E of this Part, but is not subject to the waste management plan provisions of Sections 229.176 or 229.180 of this Subpart, shall develop a waste management plan in accordance with this Section.

- (a) The owner or operator of an HMIWI subject to this Section shall conduct an assessment of its current waste management program and submit a waste management plan to the Agency, in accordance with Section 229.184(b) of this Part, that:
 - 1) Identifies, pursuant to subsection (b) of this Section, the additional technically and economically feasible measures for reducing the volume and toxicity of the waste to be incinerated; and
 - 2) Where practical, outlines a schedule for the implementation of the selected measures.
- (b) In identifying additional technically and economically feasible waste management practices, the owner or operator shall consider:
 - 1) Segregating waste streams;
 - 2) Phasing out the use of products containing toxic materials;
 - 3) Reusing products and equipment;

- 4) Reducing the use of packaging and disposable items;
 - 5) Collecting recyclable materials; and
 - 6) Improving inventory control, training and housekeeping practices.
- (c) In assessing its current waste management practices, the facility shall consider technical information on alternative waste management practices, such as the American Hospital Association publication entitled "An Ounce of Prevention: Waste Management Strategies for Health Care Facilities," incorporated by reference at Section 229.104(a) of this Part.
 - (d) Any waste management plan that has been developed by a facility subject to this Section before May 15, 1999, may be incorporated into the waste management plan required for that facility, to the extent that such a plan is consistent with the requirements of this Section.
 - (e) The waste management plan shall be updated every 5 years to coincide with either the issuance or renewal of the facility's CAAPP permit.

SUBPART L: RECORDKEEPING AND REPORTING REQUIREMENTS

Section 229.182 Recordkeeping Requirements

- a) The owner or operator of an HMIWI subject to the emission limits under Subpart E of this Part shall maintain records of the following information:
 - 1) The calendar date of each record;
 - 2) The following data, where applicable:
 - A) Concentrations of all applicable pollutants listed in Section 229.125(b) or 229.126(b) of this Part (as determined by the CEMS, if applicable) and any measurements of opacity as required under Section 229.125(c) or 229.126(c);
 - B) HMIWI charge dates, times and weights, and hourly charge rates;
 - C) If a fabric filter is used, the fabric filter inlet temperatures during each minute of operation;
 - D) The amount and type of dioxin/furan sorbent used during each hour of operation;
 - E) The amount and type of Hg sorbent used during each hour of operation;
 - F) The amount and type of HCl sorbent used during each hour of operation;
 - G) The secondary chamber temperatures recorded during each minute of operation;
 - H) The liquor flow rate to the wet scrubber inlet during each minute of operation;

- I) The horsepower or amperage to the wet scrubber during each minute of operation;
 - J) Any pressure drop across the wet scrubber system during each minute of operation;
 - K) The temperature at the outlet from the wet scrubber during each minute of operation;
 - L) The pH at the inlet to the wet scrubber during each minute of operation;
 - M) Identification of any use of the bypass stack, including dates, times, and the duration of such use; and
 - N) For sources complying with Section 229.166(b)(3) of this Part, all operating parameter data monitored;
- 3) Identification of any calendar days for which data on emission rates or operating parameters specified under subsection (a)(2) of this Section have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining data, and a description of the corrective actions taken;
- 4) Identification of any malfunctions, including the calendar date, the time and duration, and a description of the malfunction and of the corrective action taken to remedy it;
- 5) Identification of calendar days for which data on emission rates or operating parameters specified under subsection (a)(2) of this Section exceeded the applicable limits, with a description of the exceedences, reasons for such exceedences, and a description of the corrective actions taken;
- 6) The results of the initial, annual, and any other performance tests;
- 7) Records of calibration of any monitoring devices as required under Sections 229.166(b)(1), (2) and (3) and 229.168(a) and (b) of this Part; and
- 8) Identification of the names of all HMIWI operators who have met the criteria for qualification under Section 229.170 of this Part, including:
 - A) Documentation of training and the dates of the training; and
 - B) The date of the initial review and all subsequent annual reviews of the information specified in Section 229.172(a) of this Part, as required by Section 229.172(b) of this Part.
- b) The owner or operator of an HMIWI claiming an exemption from the emission limits in this Part pursuant to Section 229.110(b) of this Part shall keep contemporaneous records identifying each period of time when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned, including the calendar date and duration of such periods.

- c) The owner or operator of an HMIWI claiming an exemption pursuant to Section 229.110(c) of this Part shall keep records on a calendar quarter basis demonstrating that only pathological waste, low-level radioactive waste, orchemotherapeutic waste is burned.
- d) The owner or operator of aco-fired combustor claiming an exemption from the emission limits under Section 229.110(d) of this Part shall maintain records on a calendar quarter basis of the relative weight of hospital waste and/or medical/infectious waste, and of all other fuels or waste combusted.
- e) The owner or operator of each rural HMIWI shall maintain records of the annual equipment inspections required under Section 229.162 of this Part, any required maintenance, and any repairs not completed within 10 days after an inspection or the time frame established by the Agency.
- f) All records required under this Section shallbe maintained onsite for a period of 5 years, in either paper copy or electronic format, unless an alternative format has been approved by the Agency in a permit condition.
- g) All records required to be maintained pursuant to this Section shall be made available to the Agency upon request.

Section 229.184 Reporting Requirements

- a) The facilities manager and the responsible official for the affected source shall certify each report required under this Section.
- b) The owner or operator of an HMIWI shallsubmit to the Agency the results of any performance test conducted on the HMIWI within 60 days after conducting the performance test. The information submitted with the initial performance test required by Section 229.142 of this Part shall include:
 - 1) The test data and values for the site-specific operating parameters established for an HMIWI pursuant to either Section 229.142(d), (e) or (f) of this Part, as applicable; and
 - 2) A copy of the waste management plan required under Subpart K of this Part.
- c) All owners or operators ofHMIWIs shall submit the information specified under this subsection (c) to the Agency by September 15, 2001 and by September 15 of each year thereafter. Once an HMIWI is issued a CAAPP permit, the owner or operator of an HMIWI shall submit these reports semi-annually, in accordance with subsection (d) of this Section. The annual report shall include the following information:
 - 1) The values for site-specific operating parameters established pursuant to either Section 229.142(d), (e) or (f) of this Part;
 - 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 and for the calendar year preceding the year being reported;

- 3) Any information recorded pursuant to Section 229.182(a)(3) through (5) of this Subpart for the calendar year being reported and for the calendar year preceding the year being reported;
 - 4) If no exceedences or malfunctions were recorded under Section 229.182(a)(3) through (a)(5) of this Subpart for the calendar year being reported, a statement that no exceedences occurred during the reporting period; and
 - 5) Any use of the bypass stack, the duration of use, the reason for malfunction, and the corrective actions taken.
- d) Once the owner or operator of an HMIWI is required to submit semiannual reports, these reports must be submitted within 60 days following the end of the reporting period. The first semiannual reporting period ends on March 15 of each year and the second semiannual reporting period ends on September 15 of each year.
 - e) The owner or operator of each rural HMIWI subject to the emission limits under Section 229.126(b) of this Part, shall submit an annual report containing all information listed in subsections (b) and (c) of this Section by no later than 60 days following the year in which the data was collected. Subsequent reports shall be sent no later than 12 calendar months following the previous report. Once the unit is subject to permitting requirements under the CAAPP, the owner or operator shall submit these reports semiannually in accordance with the schedule specified in subsection (d) of this Section.

Section 229.APPENDIX A Toxic Equivalency (TEQ) Factors

The following TEQ factors shall be used to determine compliance with the dioxin/furans standards under either Section 229.125(b) or Section 229.126(b) of this Part.

Dioxin/Furan Congener	Toxic Equivalency Factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1.0
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

Section 229.APPENDIX B Operating Parameters to be Monitored and Minimum Measurement and Recording Frequencies. An “x” in any box in this matrix means that measurement of that parameter is required.

MINIMUM FREQUENCY			CONTROL SYSTEM		
Operating Parameters	Data Measurement	Data Recording	Dry Scrubber Followed by Fabric Filter	Wet Scrubber	Dry Scrubber Followed by Fabric Filter and Wet Scrubber
Maximum ¹ Charge Rate	Continuous	Once per hour	X	X	X
Maximum Fabric Filter Inlet Temperature	Continuous	Once per minute	X		X
Maximum flue gas temperature	Continuous	Once per minute	X	X	
Minimum secondary chamber temperature	Continuous	Once per minute	X	X	X
Minimum Dioxin/ Furan Sorbent Flow Rate	Hourly	Once per hour	X		X
Minimum HCl Sorbent Flow Rate	Hourly	Once per hour	X		X
Minimum Hg Sorbent Flow Rate	Hourly	Once per hour	X		X
Minimum Pressure Drop Across the Wet Scrubber or Minimum Horsepower or Amperage to Wet Scrubber	Continuous	Once per minute		X	X
Minimum Scrubber Liquor Flow Rate	Continuous	Once per minute		X	X
Minimum Scrubber Liquor pH	Continuous	Once per minute		X	X

¹For batch HMIWIs, record the charge per batch.

PART 229.APPENDIX C Reference Test Methods and Procedures for Performance Tests.

The following test methods and procedures shall be used as specified in Section 229.140(e) of this Part, when conducting any performance test for the purpose of demonstrating compliance with the emission limits established under this Part.

- a) All performance tests shall consist of a minimum of 3 test runs conducted under representative operating conditions. The minimum sample time of 1 hour per test run shall be used unless otherwise indicated. In order to demonstrate compliance with the emission limits set forth in Subpart E of this Part, the arithmetic average of all 3 performance test runs shall be used.
- b) Method 1, at 40 CFR 60, incorporated by reference at Section 229.104(d) of this Part, shall be used to select the sampling location and number of traverse points.
- c) Method 2, at 40 CFR 60 shall be used to determine average gas density, as well as to measure gas velocity.
- d) Method 3 or 3A, at 40 CFR 60 shall be used for gas composition analysis, including measurement of oxygen concentration. Method 3 or 3A, at 40 CFR 60 shall be used simultaneously with each reference method.
- e) The pollutant concentrations shall be adjusted to 7 percent oxygen using the following equation:

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

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.

- f) Method 5 or 29, at 40 CFR 60 shall be used to measure particulate matter emissions.
- g) Method 9, at 40 CFR 60 shall be used to measure stack opacity.
- h) Method 10 or 10B, at 40 CFR 60 shall be used to measure CO emissions.
- i) Method 23, at 40 CFR 60 shall be used to measure total dioxin/furan emissions. The minimum sample time shall be 4 hours per test run. If the affected facility has selected the TEQ for dioxin/furans (set out in Appendix A of this Part), as provided under Section 229.125(b) or 229.126(b) of this Part, whichever is applicable, the following procedures shall be used to determine compliance:

- 1) Measure the concentration of each dioxin/furan tetra-through-octa-congener emitted using Method 23;
 - 2) For each dioxin/furan congener measured in accordance with subsection i)(1) of this Section, multiply the congener concentration by its corresponding TEQ factor specified in Appendix A of this Part; and
 - 3) Sum the products calculated in accordance with subsection i)(2) of this Section to obtain the total concentration of dioxin/furans emitted in terms of TEQ.
- j) Method 26 or 26A, at 40 CFR 60 shall be used to measure HCl emissions. If the affected facility has selected the percentage reduction standard for HCl as provided under Section 229.125(b) or 229.126(b) of this Part, whichever is applicable, the percentage reduction in HCl emissions (%R_{HCl}) is computed using the following formula:

$$(\%R_{HCl}) = ((E_i - E_o) / E_i) \times 100$$

Where:

%R_{HCl} = percentage reduction of HCl emissions achieved;

E_i = HCl emissions concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and

E_o = HCl emissions concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

- k) Method 29, at 40 CFR 60 shall be used to measure Pb, Cd, and Hg emissions. If the affected facility has selected the percentage reduction standards for metals as provided in Section 229.125(b) or 229.126(b) of this Part, whichever is applicable, the percentage reduction in emissions (%R_{metal}) is computed using the following formula:

$$(\%R_{metal}) = ((E_i - E_o) / E_i) \times 100$$

Where:

%R_{metal} = percentage reduction of metal emissions (Pb, Cd, or Hg) achieved;

E_i = metal emissions concentration (Pb, Cd, or Hg) measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and

E_o = metal emissions concentration (Pb, Cd, or Hg) measured at the control device outlet, corrected to 7 percent oxygen (dry basis).