METROPOLITAN HEALTH DEPARTMENT
BUREAU OF POLLUTION CONTROL

Regulation No. 10

INFECTIOUS WASTE INCINERATORS

SECTION 10-1. DEFINITIONS

As used in this Regulation, all terms not defined herein shall have the meaning given them in Chapter 10.56, "Air Pollution Control," Section 10.56.010 "Definitions," of the Metropolitan Code of Law.

(a) **Afterburner.** Means an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.

(b) **Antineoplastic agents.** Means chemotherapy drugs or compounds used in the treatment of cancer. For the purpose of this rule container or other items containing residues of antineoplastic agents shall not be considered antineoplastic agents.

(c) **Continuous program of physical on-site construction.** Means significant and continuous site preparation work such as major clearing or excavation followed by placement of footings, pilings, and other materials of construction, assembly or installation of unique facilities or equipment at the site of the source.

(d) **In existence.** Means that the owner or operator has obtained all necessary preconstruction approvals or permits required by the Division and either has (1) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (2) entered into binding agreements or contractual obligations, which cannot b canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in a reasonable time, or that the owner or operator possesses a valid operating permit.

(e) **Incinerator.** Means any device used in the process of controlled

combustion of waste for the purpose of reducing the volume and hazardous potential of the waste charged by destroying combustible matter leaving the noncombustible ashes or residue.

(f) **Infectious waste.** Means solid or liquid wastes which contain pathogens with sufficient virulence and quantity such that exposure to the waste by a susceptible host could result in an infectious disease. For purposes of this Rule, the following wastes shall be considered to be infectious wastes:

(1) Wastes contaminated by patients who are isolated due to communicable disease, as provided in the U.S. Centers for Disease Control Guidelines for Isolation Precautions in Hospital, (July, 1983).

(2) Cultures and stocks of infectious agents; including specimen cultures collected from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, wastes from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures.

(3) Waste human blood and blood products such as serum, plasma, and other blood components.

(4) Pathological wastes, such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy.

(5) All discarded sharps (e.g., hypodermic needles, syringes, pasteur pipettes, broken glass, scalpel blades) used in patient care of which have come into contact with infectious agents during use in medical, research, or industrial laboratories.

(6) Contaminated carcasses, body parts, and bedding of animals that were exposed to pathogens in research, in the production of biologicals, or in the in vivo testing of pharmaceuticals.

(7) Other wastes determined to be infectious by the facility, which shall be set forth in a written policy.

(g) **Multiple-chamber incinerator.** Means an incinerator consisting of at

least two refractory lined combustion chambers(primary and secondary) in series, physically separated by refractory walls, interconnected by gas passage ports or ducts.

(h) **Residues of antineoplastic agents.** Means the portion of compound that remains in a container or other items after all the compound has been material s from that type of container, e.g., pouring, pumping, and aspirating; and no more than 2.5 centimeters (one inch) of material remain on the bottom of the container of other item, or no more than 3 (three) percent by weight of the total capacity of the container remains in the container or other item.

(i) **Substantial loss.** Generally means a loss which would equal or exceed 10 percent of the total project cost.

SECTION 10-2 - PROHIBITED ACT

(a) No owner or operator of an incinerator which burns infectious waste may operate, cause, allow, or permit the operation of such incinerator, unless the incinerator and its emissions are in conformance with the applicable standards of this Regulation.

(b) The Director may establish an emission limit more restrictive than the otherwise specified in this Regulation and/or an emission limit for any air contaminant discharged from the infectious waste incinerator that is not specified in this Regulation. The Director may establish, operating hours, process flow rates, or the operating parameters as conditions on any permit. Violation of these conditions shall result in revocation of the issued permit.

(c) An owner or operator shall not burn infectious waste except in a multiple-chamber incinerator with a solid hearth, or in a device found to be equally effective for the purpose of air contaminant control as an approved multiple-chamber incinerator as determined by the Director except as provided in Section 10-4 Paragraph (a) Subparagraph (3).

SECTION 10-3 - EMISSION STANDARDS

(a) An incinerator in existence on November 6, 1988; Particulate emission shall not exceed 0.1 grains per dry standard cubic foot of exhaust gas corrected to 12 percent CO_2.

(b) The following requirements apply to all new and modified incinerators:

(1) Incinerators with a capacity equal to or less than 500 pounds per hour; Particulate emissions shall not exceed 0.1 grains per dry standard cubic foot of exhaust gas corrected to 12 percent CO_2.

(2) Incinerators with a capacity greater than 500 pounds per hour but equal to or less than 1000 pound per hour; Particulate emissions shall not exceed 0.08 grains per dry standard cubic foot of exhaust gas corrected to 12 percent CO_2.

(3) Incinerators with a capacity greater than 1000 pounds per hour; Particulate emissions shall not exceed 0.02 grains per dry standard cubic foot of exhaust gas corrected to 12 percent CO_2.

(c) The Director shall specify on the construction and/or operating permits as permit conditions, the hydrogen chloride (HCl) emission standard that is reasonable available control technology (RACT) so that the air quality impact from a source shall not exceed 70.0 micrograms per cubic meter HCl, 24-hour average. The operating hours of the source may be limited to meet the impact level.

(d) Visible Emission Standards

(1) No owner or operator subject to the provisions of this chapter shall cause to be discharged into the atmosphere from any affected facility any gases which exhibit greater than 10 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 20 percent opacity. This opacity standard shall not apply to burner startups when only firing auxiliary fuel without waste being burned.

(2) Visible determination of opacity of emissions shall be determined by the reference method as specified in Chapter 4, Subchapter One, Section 4-1-5, "Testing," of the Metropolitan Code of Law.

SECTION 10-4 - PERFORMANCE SPECIFICATIONS.

(a) Temperature and Residence Time Requirements

(1) The incinerator secondary chamber shall be maintained at a minimum temperature of 1800°F, except as specified in subparagraph (3) of this paragraph.

(2) The minimum secondary chamber residence time for those incinerators not in existence on November 6, 1988, shall be 1.0 second. The minimum secondary chamber retention time for incinerators in existence on November 6, 1988, shall be sufficient to prevent excess visible emissions as specified in Section 10-3, paragraphs (d)(1).

(3) Owners or operators which have an incinerator in existence on November 6, 1988, without a secondary chamber and equipped with an afterburner operated at a minimum temperature of 1800°F may choose to meet a more restrictive visible emission standard of zero percent requirements. The opacity in lieu of meeting the secondary chamber requirements. The opacity shall be evaluated using Tennessee Visible Emission Evaluation (TVEE) Method 3 approved by the Tennessee Air Pollution Control Board on December 12, 1984 and amended on May 30, 1985.

(4) An infectious waste incinerator used to combust antineoplastic agents must be operated with the secondary chamber at a minimum exit temperature of 1800°F with a secondary chamber design residence time of not less than 1.50 seconds.

(b) The firing of the incinerator burners shall be controlled automatically to maintain the specified minimum secondary chamber or afterburner temperature.

(c) Charging Systems

(1) Incinerators shall be equipped with an automatic mechanical loading device, and an interlock system shall be provided to prevent charging until the secondary chamber exit temperature of 1800°F is established except as provided for below.

(2) The owner or operator of an incinerator, except a batch incinerator, in existence on November 6, 1988, which is manually fed may submit a written request to the Director that manual feeding be allowed. The request must include a plan detailing the methods and operating procedure to be employed in manually charging the incinerator. The Director shall determine if the plan provided is acceptable. The plan must be submitted to the Director by November 6, 1989.

(A) The owner or operator of the incinerator must post or file on the operating premises a copy of the approved plan.

(B) The plan shall not relieve the owner or operator of the duty of meeting all other emission requirements.

(C) Any violation of the conditions under which the plan was approved or any violation of other requirements of this chapter may result in the Director requiring than an automatic mechanical loading device be installed.

(3) Batch incinerators (fully loaded while cold and never opened until burn cycle is complete) shall incorporate a lockout system which will prevent ignition of the waste until the exit temperature of the secondary chamber of the afterburner reaches 1800°F and prevent recharging until the combustion and burndown cycle are complete.

(d) Startup and Shut down Requirements

(1) No waste shall be charges to an incinerator other than a batch incinerator until the secondary chamber or afterburner has achieved a minimum temperature of 1800°F. The secondary chamber or afterburner must achieve and maintain the required minimum temperature for 15 minutes before charging begins.

(2) During shutdowns the secondary chamber or afterburner minimum temperature of 1800°F is to be maintained using auxiliary burners until the wastes are completely combusted and the burndown cycle is complete.

SECTION 10-5 - MONITORING REQUIREMENTS

The secondary chamber or afterburner temperature shall be continuously monitored and recorded. Sensors shall be installed, maintained, and operated such that the flames from the burners do not impinge upon the sensors. The secondary chamber temperature shall be measured at or beyond the chamber exit. The temperature shall be measured at or beyond the chamber exit. The temperature sensing device shall have an accuracy that is $\pm$ 25°F over its operating range. The recorders must have a minimum chart speed of one (1) inch per hour for strip chart recorders and a maximum of 24 hours per chart for circular recorders.

SECTION 10-6 - COMPLIANCE SCHEDULE FOR EXISTING INFECTIOUS WASTE INCINERATORS

(a) Incinerators in existence before November 6, 1988, will be given 18 months from November 6, 1988, or until May 6, 1990, to achieve compliance with the standards and requirements of this chapter. Each owner or operator of an existing incinerator shall wither demonstrate compliance with the requirements of this chapter or submit a schedule of corrective action detailing the plan of action to achieve compliance by May 6, 1990, to the Director by November 6, 1989.

(b) Individual compliance schedule approved under this rule must contain the following increments of progress and achieve final compliance with the specified emission standards and requirements.

(1) Date contract will be awarded

(2) Date initial construction will commence

(3) Date construction will be completed

(4) Date final compliance will be achieved

(5) Date of compliance demonstration

(c) The individual compliance schedule must be received and approved by the Director prior to the date of the first increment of progress.

SECTION 10-7 - TESTING REQUIREMENT

(a) For incinerators in existence before November 6, 1988, a particulate matter stack test shall be conducted by November 6, 1989. For owners or operators with an approved schedule of corrective action, stack testing will be conducted as specified in the approved schedule.

(b) For incinerators where construction commenced on or after November 6, 1988, stack testing for particulate matter must be conducted within 60 days after achieved the maximum production rate at which the incinerator will be operated, but not later than 120 days after initial startup.

(c) Stack testing for particulate matter shall be conducted in accordance with the methods prescribed in Chapter 4, Subchapter One, Section 4-1-15, "Testing," of the Metropolitan Code of Law.

(d) The owner or operator must furnish the Director with a written report of the results of any stack testing within 30 days of the completion of the test.

(e) Stack testing for hydrogen chloride may be required by the Director. The stack testing shall be conducted in a manner prescribed by the Director.

(f) Performance tests shall be conducted under such conditions as the Director shall specify to the facility operator based upon representative performance of the affected facility. The owner or operator shall make available to the Director such records as may be necessary to determine the conditions of the performance test(s). Operations during startups, shutdowns, and malfunctions shall not constitute representative conditions of performance tests.

(g) The owner or operator shall provide the Director twenty (20) days notice of the performance test to afford the Director the opportunity to have an observer present.

(h) The Director may require air contaminant stack testing as determined to be necessary to assure continuous compliance with the standards of this chapter and any emission limit stipulated as a permit condition.

SECTION 10-8 - RECORD KEEPING AND REPORTING REQUIREMENTS

(a) Records shall be maintained at the source for a minimum of 2 years and shall be made available for review upon request.

(b) Operating procedures, startup procedures, and shutdown procedures for incinerators shall be approved by the Director and posted on-site near the incinerator.

(c) Inspection and maintenance schedules for incinerators are to be posted or kept on-site at or near the incinerator.

(d) Records shall be kept of inspection, maintenance, and repairs.

SECTION 10-9 - SEVERABILITY

The provisions of any part, section, subsection, paragraph, phrase or clause of this Regulation that shall be adjudged invalid or unconstitutional by any court of competent jurisdiction, the judgement shall not affect, compare, or invalidate the remainder of this Regulation, but should be confined in its operation to the part, section, subsection, paragraph, phrase, or clause of this Regulation that shall not be directly involved in the controversy in which such judgement shall have been redeemed.

THIS IS THE FEDERALLY APPROVED REGULATION AS OF FEBRUARY 9, 1990
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