

**Shelby County Air Code Section 3-39      Standards For Infectious Waste Incinerators**

For the purpose of enforcement of standards for infectious waste incinerators, Chapter 1200-3-25 of the Tennessee Air Pollution Control Regulations, as effective on June 30, 2003, is hereby adopted by reference as a portion of this Code. Such regulations shall become a part of this Code and shall have the same effect as if set out in full herein.

(Shelby County Ord. No. 50, effective July 20, 1989. Shelby County Ord. No. 159, effective 5-14-95. Amended by Shelby County Ord. No. 203, effective 9-18-98. Amended by Shelby County Ord No. 241, effective 8-23-01. Amended by Shelby County Ord. No. 265, effective September 30, 2002. Amended by Shelby County Ord. No. 276, effective December 16, 2003. Pursuant to T.C.A. 68-201-115.)



RULES  
OF THE  
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
BUREAU OF ENVIRONMENT  
DIVISION OF AIR POLLUTION CONTROL

CHAPTER 1200-3-25

STANDARDS FOR INFECTIOUS WASTE INCINERATORS

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**1200-3-25-.01 PURPOSE.**

It is the purpose of this chapter to establish emission standards and performance specifications for new and existing incinerators that burn infectious waste so as to prevent undesirable levels of air contaminants in the atmosphere.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



**1200-3-25-.02 GENERAL.**

- (1) Incinerators which burn infectious waste generated by hospitals, nursing homes or ambulatory surgical treatment centers as such facilities are defined in T.C.A. Section 68-11-201 are subject to the provisions of this chapter.
- (2) 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 Technical Secretary but not as described in 1200-3-25-.06(1)(c).
- (3) The Technical Secretary may establish an emission limit more restrictive than that otherwise specified in this chapter and/or an emission limit for any air contaminant discharged from the infectious waste incinerator that is not specified in this chapter. These emission limits shall be a special condition on any permit or order concerning the source and shall be ratified by the Air Pollution Control Board. Violation of the special condition shall be grounds for revocation of the issued permit or order pursuant to the UAPA.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.





**1200-3-25-.03 EXISTING SOURCE COMPLIANCE SCHEDULES.**

- (1) Incinerators in existence before November 6, 1988 must be in compliance, on or before 18 months from November 6, 1988, with the standards and requirements of this chapter. Each owner or operator of an existing incinerator shall either demonstrate compliance with the requirements of this chapter or submit a compliance schedule detailing the plan of action to achieve compliance within the above 18-month time frame to the Technical Secretary within 180 days from November 6, 1988.
- (2) Individual compliance schedules for existing incinerators approved under this rule must contain the following increments of progress and achieve final compliance with the specified emission standards and requirements.
  - (a) Date contract will be awarded
  - (b) Date initial construction will commence
  - (c) Date construction will be completed
  - (d) Date final compliance will be achieved
  - (e) Date of compliance demonstration
- (3) The individual compliance schedule must be received and approved by the Technical Secretary prior to the date of the first increment of progress.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



#### 1200-3-25-.04 DEFINITIONS.

Unless specifically defined in this chapter, the definitions from Chapter 1200-3-2 will apply:

- (1) "Incinerator" means any device used in the process of controlled combustion of waste for the purpose of reducing the volume and minimizing the potential for harm to public health from the waste charged by destroying combustible matter leaving the noncombustible ashes or residue.
- (2) "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, all of the following types of wastes shall be considered to be infectious wastes:
  - (a) 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).
  - (b) 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.
  - (c) Waste human blood and blood products such as serum, plasma, and other blood components.
  - (d) Pathological wastes, such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy.
  - (e) All discarded sharps (e.g., hypodermic needles, syringes, pasteur pipettes, broken glass, scalpel blades) used in patient care or which have come into contact with infectious agents during use in medical, research, or industrial laboratories.
  - (f) 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.
  - (g) Other wastes determined to be infectious by the facility.
- (3) "In existence" means that the owner or operator 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 be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction at the facility to be completed in a reasonable time, or (3) that the owner or operator possesses a valid operating permit.
- (4) "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.
- (5) "Substantial loss" generally means a loss which would equal or exceed 10 percent of the total project cost.
- (6) "Anti-neoplastic agents" means chemotherapy drugs or compounds used in the treatment of cancer. For the purpose of this rule, containers or other items containing residues of anti-neoplastic agents shall not be considered anti-neoplastic agents.
- (7) "Residues of anti-neoplastic agents" means the portion of compound that remains in a container or other item after all the compound has been removed using the practices commonly employed to remove materials 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 or 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.
- (8) "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.

- (9) "Afterburner" means an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.
- (10) "Batch incinerator" means an incinerator that is loaded while the chamber(s) is cold and is not recharged until the burndown cycle is complete.
- (11) "Biologicals" means noxious organisms.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988. Amendment filed May 17, 1990; effective July 1, 1990.

**1200-3-25-.05 EMISSION STANDARDS.**

- (1) Particulate matter shall not be in excess of 0.1 grains per dry standard cubic foot of exhaust gas corrected to 12 percent CO<sub>2</sub>.
- (2) The Technical Secretary shall specify on the construction and/or operating permits as permit conditions, the hydrogen chloride (HCl) emission level 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 owner or operator of the infectious waste incinerator may choose to limit the operating hours of the source to meet the impact level.
- (3) Visible Emission Standards
  - (a) 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.
  - (b) Visible determination of opacity of emissions shall be determined by the reference method as specified in Rule 1200-3-16-.01(5)(g) of the Official Compilation of the Rules and Regulations of the State of Tennessee and the Federal Register, Vol. 39, No. 219, November 12, 1974.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



**1200-3-25-.06 PERFORMANCE SPECIFICATIONS.**

- (1) Temperature and Residence Time Requirements
  - (a) The incinerator secondary chamber shall be maintained at a minimum temperature of 1600°F, except as specified in subparagraph (c) of this paragraph.
  - (b) 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 residence time for incinerators in existence on November 6, 1988 shall be sufficient to prevent excess visible emissions as specified in subparagraph 1200-3-25-.05(3)(a).
  - (c) 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 1600°F may choose to meet a more restrictive visible emission standard of zero percent 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 and included in the State Implementation Plan. TVEE Method 3 was approved by EPA on March 19, 1986 and published in the Federal Register, Vol. 51, No. 53, page 9445, May 19, 1986.
  - (d) An infectious waste incinerator used to combust anti-neoplastic 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 1.5 seconds.
- (2) The firing of the incinerator burners shall be controlled automatically to maintain the specified minimum secondary chamber or afterburner temperature.
- (3) Charging System
  - (a) 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 1600°F is established except as provided for below.
  - (b) 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 Technical Secretary 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 Technical Secretary shall determine if the plan provided is acceptable. The plan must be submitted to the Technical Secretary within 180 days of November 6, 1988 and the operation of the incinerator by this plan shall become a condition of the operating permit.
    - (i) The owner or operator of the incinerator must post or file on the operating premises a copy of the approved plan.
    - (ii) The approval of the plan shall not relieve the owner or operator of the duty to comply with all other applicable emission requirements.
    - (iii) Any violation of the permit conditions or other requirements of this chapter may result in the Technical Secretary requiring that an automatic mechanical loading device be installed.
  - (c) Batch incinerators shall incorporate a lockout system which will prevent ignition of the waste until the exit temperature of the secondary chamber or the afterburner reaches 1600°F and prevent recharging until the combustion and burndown cycles are complete.
- (4) Startup and Shutdown Requirements
  - (a) No waste shall be charged to an incinerator other than a batch incinerator until the secondary chamber or afterburner has achieved a minimum temperature of 1600°F, except as specified in subparagraph (b) of this paragraph. The secondary chamber or afterburner must achieve and maintain the required minimum

temperature for 15 minutes before charging begins.

- (b) No waste shall be charged to an incinerator used to combust anti-neoplastic agents until the secondary chamber has achieved a minimum temperature of 1800°F. The secondary chamber must achieve and maintain the required minimum temperature for 15 minutes before charging begins.
- (c) During incinerator shutdowns the secondary chamber or afterburner minimum temperature of 1600°F is to be maintained using auxiliary burners until the wastes are completely combusted and the burndown cycle is complete. For incinerators used to combust anti-neoplastic agents, the secondary chamber must be maintained at a minimum temperature of 1800°F during a shutdown until all wastes are completely combusted and the burndown cycle is complete.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



**1200-3-25-.07 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 sensing device shall have an accuracy that is  $\pm 25^{\circ}\text{F}$  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.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



## 1200-3-25-.08 TESTING REQUIREMENTS

- (1) For incinerators in existence before November 6, 1988, a particulate matter stack test shall be conducted within 180 days of November 6, 1988. For owners or operators with an approved compliance schedule stack testing will be conducted as specified in the approved schedule.
- (2) For incinerators where construction commenced on or after November 6, 1988, stack testing for particulate matter must be conducted within 60 days after achieving the maximum capacity at which the incinerator will be operated, but no later than 180 days after initial startup.
- (3) In lieu of requiring a source to stack test, the Technical Secretary may approve a previously conducted stack testing report for an identical unit tested under operating conditions representative of worst case emission release.
- (4) The owner or operator must furnish the Technical Secretary with a written report of the results of any stack testing.
- (5) Stack testing for particulate matter shall be conducted in the manner prescribed in Rule 1200-3-12-.03 of the Official Compilation of the Rules and Regulations of the State of Tennessee.
- (6) Stack testing for hydrogen chloride may be required by the Technical Secretary. The stack testing shall be conducted in a manner prescribed by the Technical Secretary.
- (7) Performance tests shall be conducted under such conditions as the Technical Secretary shall specify to the facility operator based upon representative performance of the affected facility. The owner or operator shall make available to the Technical Secretary 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.
- (8) The owner or operator shall provide the Technical Secretary twenty (20) days notice of the performance test to afford the Technical Secretary the opportunity to have an observer present.
- (9) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as described in Rule 1200-3-10-.01 of the Official Compilation of the Rules and Regulations of the State of Tennessee.
- (10) The Technical Secretary 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.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



**1200-3-25-.09 RECORD KEEPING AND REPORTING REQUIREMENTS.**

- (1) Records shall be maintained at the source for a minimum of 2 years from the date compiled and shall be made available for review upon request of the Technical Secretary or his agent.
- (2) Operating procedures, startup procedures, and shutdown procedures for infectious waste incinerators shall be approved by the Technical Secretary and posted on-site at or near the incinerator.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.



**1200-3-25-.10 INSPECTION AND MAINTENANCE.**

- (1) Inspection and maintenance schedules for infectious waste incinerators are to be posted or kept on-site at or near the incinerator.
- (2) Records shall be kept of inspections, maintenance, and repairs.

Authority: T.C.A. Section 68-201-105 and 4-5-202. Administrative History: Original Rule filed September 21, 1988; effective November 6, 1988.

