

# LANE REGIONAL AIR PROTECTION AGENCY

## TITLE 30

### Incinerator Regulations

#### Section 30-005 Purpose and Applicability

The purpose of these rules is to establish state-of-the-art emission standards, design requirements, and performance standards for all solid, infectious waste and crematory incinerators, in order to minimize air contaminant emissions and provide adequate protection of public health. The rules apply to all existing solid and infectious waste and crematory incinerators and to all that will be built, modified, or installed within Lane County, Oregon. These rules shall not apply to municipal waste combustors.

#### Section 30-010 Definitions

The definitions in title 12 and title 46 and this section apply to this title. If the same term is defined in this section and title 12 or title 46, the definition in this section applies to this title.

- "Acid Gases" means any exhaust gas which includes hydrogen chloride and sulfur dioxide.
- "Administrator" means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency.
- "CFR" means Code of Federal Regulations and, unless otherwise expressly identified, refers to the July 1, 2016 edition.
- "Continuous Emissions Monitoring (CEM)" means a monitoring system for continuously measuring the emissions of a pollutant from an affected incinerator. Continuous monitoring equipment and operation shall be certified in accordance with EPA performance specifications and quality assurance procedures outlined in 40 CFR 60, Appendices B and F, and the DEQ CEM Manual.
- "Crematory Incinerator" means an incinerator used solely for the cremation of non-pathological human, non-pathological animal remains, and appropriate containers.
- "Cultures and stocks" includes etiologic agents and associated biologicals, including specimen cultures and dishes and devices used to transfer, inoculate and mix cultures, wastes from production of biologicals, and serums and discarded live and attenuated vaccines. "Cultures" does not include throat and urine cultures (see also "infectious waste").
- "Dioxins and Furans" means total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.
- "Dry Standard Cubic Foot" means the amount of gas, free of uncombined water, that would occupy a volume of 1 cubic foot at standard conditions. When applied to combustion flue

gases from waste or refuse burning, "Standard Cubic Foot (SCF)" means adjustment of gas volume to that which would result at a concentration of 7% oxygen (dry basis) or 50 percent excess air.

- "Incineration Operation" means any operation in which combustion is carried on in an incinerator, for the principal purpose or with the principal result, of oxidizing wastes to reduce their bulk and/or facilitate disposal.
- "Incinerator" means a combustion device specifically for destruction, by high temperature burning, of solid, semi-solid, liquid, or gaseous combustible wastes. This does not include devices such as open or screened barrels, drums, or process boilers.
- "Infectious Waste" means waste which contains or may contain any disease-producing microorganism or material including, but not limited to, biological waste, cultures and stocks, pathological waste, and sharps (see individual definitions for these terms).
- "Infectious Waste Incinerator" means an incinerator which is operated or utilized for the disposal or treatment of infectious waste, including combustion for the recovery of heat.
- "Parts Per Million (ppm)" means parts of a contaminant per million parts of gas by volume on a dry-gas basis (1 ppm equals 0.0001% by volume).
- "Pathological waste" includes biopsy materials and all human tissues; anatomical parts that emanate from surgery, obstetrical procedures, autopsy and laboratory procedures; and animal carcasses exposed to pathogens in research and the bedding and other waste from such animals. "Pathological wastes" does not include teeth, or formaldehyde or other preservative agents (see also "infectious waste").
- "Primary Combustion Chamber" means the discrete equipment, chamber or space in which drying of the waste, pyrolysis, and essentially the burning of the fixed carbon in the waste occurs.
- "Pyrolysis" means the endothermic gasification of waste material using external energy.
- "Refuse" means unwanted matter.
- "Refuse Burning Equipment" means a device designed to reduce the volume of solid, liquid, or gaseous refuse by combustion.
- "Secondary (or Final) Combustion Chamber" means the discrete equipment, chamber, or space, excluding the stack, in which the products of pyrolysis are combusted in the presence of excess air, such that essentially all carbon is burned to carbon dioxide.
- "Sharps" includes needles, IV tubing with needles attached, scalpel blades, lancets, glass tubes that could be broken during handling, and syringes that have been removed from their original sterile containers (see also "infectious waste").

- "Solid Waste" means refuse, more than 50% of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as metal, glass, and rock.
- "Solid Waste Incinerator" means an incinerator which is operated or utilized for the disposal or treatment of solid waste, including combustion for the recovery of heat.
- "Transmissometer" means a device that measures opacity and conforms to EPA specification Number 1 in Title 40 CFR, Part 60, Appendix B.

**Section 30-015 Best Available Control Technology for Solid and Infectious Waste Incinerators**

- (1) Notwithstanding the specific emission limits set forth in Section 30-020, in order to maintain overall air quality at the highest possible levels, each solid and infectious waste incinerator is required to use best available control technology (BACT). In no event shall the application of BACT result in emissions of any air contaminant which would exceed the emission limits set forth in these rules.
- (2) All installed equipment shall be operated and maintained in such a manner that emissions of air contaminants are kept at the lowest possible level.

**Section 30-020 Emission Limitations for Solid and Infectious Waste Incinerators**

No person shall cause, suffer, allow, or permit the operation of any solid or infectious waste incinerator in a manner which violates the following emission limits and requirements:

- (1) Particulate Matter Emissions (PM)
  - (a) For solid and infectious waste incinerators constructed or modified on or after March 13, 1990, emissions from each stack shall not exceed 0.015 grains per dry standard cubic foot of exhaust gases corrected to seven (7) percent O<sub>2</sub> at standard conditions.
  - (b) For solid and infectious waste incinerators constructed or modified before March 13, 1990, emissions from each stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases corrected to seven (7) percent O<sub>2</sub> at standard conditions.
- (2) Hydrogen Chloride (HCl)
  - (a) For existing and new solid and infectious waste incinerators, emissions of hydrogen chloride from each stack shall not exceed 50 ppm as an average during any sixty (60)-minute period, corrected to 7% O<sub>2</sub> (dry basis); or
  - (b) Shall be reduced by at least ninety (90)% by weight from their potential HCl emissions rate on an hourly basis.
- (3) Sulfur Dioxide (SO<sub>2</sub>)

- (a) For existing and new solid and infectious waste incinerators, emissions of sulfur dioxide from each stack shall not exceed 50 ppm as a running three (3)-hour average, corrected to 7% O<sub>2</sub>, (dry basis); or
  - (b) Shall be reduced by at least 70% by weight from their potential SO<sub>2</sub> emission rate on a three (3)-hour basis.
- (4) Carbon Monoxide (CO). For existing and new solid and infectious waste incinerators, emissions of carbon monoxide from each stack shall not exceed 100 ppm as a running eight (8)-hour average, corrected to 7% O<sub>2</sub> (dry basis).
  - (5) Nitrogen Oxide (NO<sub>x</sub>). For solid and infectious waste incinerators constructed or modified on or after March 13, 1990 with the potential to process 250 tons/day or more of wastes, emissions of nitrogen oxide from each stack shall not exceed 200 ppm as a running 24-hour average, corrected to 7% O<sub>2</sub> (dry basis).
  - (6) Opacity. Opacity, as measured visually by an applicable EPA Method or by a transmissometer, shall not exceed 10% for a period aggregating more than six (6) minutes in any sixty (60)-minute period.
  - (7) Fugitive Emissions. All solid and infectious waste incinerators shall be operated in a manner which prevents or minimizes fugitive emissions, including but not limited to the paving of all normally traveled roadways within the plant boundary and enclosing of all material transfer points.
  - (8) Dioxin/furans. For solid and infectious waste incinerators with a waste charging rate of 250 tons/day or greater, emissions from each stack shall not exceed 30 nanograms of dioxin/furans per dry standard cubic foot.
  - (9) Other Wastes. No solid or infectious waste incinerator subject to these rules shall burn radioactive or hazardous waste, or any other waste not specifically authorized in LRAPA's Air Contaminant Discharge Permit.
  - (10) Other contaminants. For any incinerator subject to these rules, in the absence of an air-contaminant-specific emission limit or ambient air quality standard, LRAPA may establish, by permit, emission limits for any other air contaminants to protect human health and the environment.

### **Section 30-025 Design and Operation for Solid and Infectious Waste Incinerators**

- (1) Each solid or infectious waste incinerator shall have at least a primary and secondary combustion chamber.
- (2) Temperature and residence time. Each solid or infectious waste incinerator shall be designed and operated to maintain temperatures of at least 1400° F in the primary chamber. Combustion gases in the secondary chamber shall be maintained at a minimum temperature of 1800° F for at least one (1) second residence time.

- (3) Auxiliary Burners. Each solid or infectious waste incinerator shall be designed and operated with automatically controlled auxiliary burners capable of maintaining the combustion chamber temperatures specified in section 2 of this rule, and shall have sufficient auxiliary fuel capacity to maintain said temperatures.
- (4) Interlocks. Each solid or infectious waste incinerator shall be designed and operated with an interlock system which:
  - (a) Prevents charging until the final combustion chamber reaches 1800° F;
  - (b) For batch-fed solid or infectious waste incinerators, prevents recharging until each combustion cycle is complete;
  - (c) Ceases charging if the secondary chamber temperature falls below 1800° F for any continuous fifteen (15)-minute period; and
  - (d) Ceases charging if carbon monoxide levels exceed 150 ppm (dry basis), corrected to 7% O<sub>2</sub> over a continuous fifteen (15)-minute period.
- (5) Air Locks. Each mechanically fed solid or infectious waste incinerator shall be designed and operated with an air lock control system to prevent opening the incinerator to the room environment. The volume of the loading system must be designed so as to prevent overcharging, to assure complete combustion of the waste.
- (6) Combustion Efficiency. Except during periods of startup and shutdown, each solid or infectious waste incinerator shall achieve a combustion efficiency of 99.9% based on a running eight (8)-hour average, computed as follows:

$$CE = \frac{CO_2}{CO_2 + CO} \times 100$$

CO = Carbon monoxide in the exhaust gas, parts per million by volume (dry) at standard conditions

CO<sub>2</sub> = Carbon dioxide in the exhaust gas, parts per million by volume (dry) at standard conditions

- (7) Stack Height. Each solid or infectious waste incinerator stack shall be designed in accordance with Good Engineering Practice (GEP) as defined in Title 40 CFR, Parts 51.100(ii) and 51.18, in order to avoid the flow of stack pollutants into any building ventilation intake plenum.
- (8) Operator Training and Certification. Each solid or infectious waste incinerator shall be attended at all times during operation by one or more individuals who have received training necessary for proper operation. A description of the training program shall be submitted to the LRAPA for approval. A satisfactory training program shall consist of any of the following:

- (a) Certification by the American Society of Mechanical Engineers (ASME) for solid waste incinerator operation; or
  - (b) For infectious waste incineration, successful completion of EPA's Medical Waste Incinerator Operating training course; or
  - (c) Other certification or training by a qualified organization as to proper operating practices and procedures, which has been pre-approved by LRAPA prior to enrollment. In addition, the owner or operator of a solid or infectious waste incinerator facility shall develop and submit a manual for proper operation and maintenance, to be reviewed with employees responsible for incinerator operation on an annual basis.
  - (d) Copies of the written certificate of training of the operator shall be kept on site at all times, available LRAPA review.
- (9) Odors. In cases where solid or infectious waste incinerator operation causes odors which interfere with the use and enjoyment of property, LRAPA may require, by permit, additional practices and procedures to prevent or eliminate those odors, in accordance with Title 49.

**Section 30-030 Continuous Emission Monitoring for Solid and Infectious Waste Incinerators**

- (1) Each solid waste incinerator shall be equipped with continuous monitoring for the following:
- (a) Sulfur dioxide;
  - (b) Carbon monoxide;
  - (c) Opacity;
  - (d) Primary combustion chamber temperature;
  - (e) Final combustion chamber temperature;
  - (f) Flue gas outlet temperature;
  - (g) Oxygen;
  - (h) Nitrogen oxide--new incinerators with a potential waste feed rate of 250 tons/day or more; and
  - (i) HCl--for incinerators with a potential waste feed rate of 250 tons per day or more.
- (2) Each infectious waste incinerator shall be equipped with continuous monitoring for the following:
- (a) Carbon monoxide;
  - (b) Opacity;
  - (c) Primary combustion chamber temperature;
  - (d) Final combustion chamber temperature; and
  - (e) HCl.
- (3) LRAPA may, at any time following the effective date of these rules, require the installation and operation of any other continuous emission monitors which LRAPA determines are necessary in order to demonstrate compliance with emission limits set forth in these regulations.

- (4) The monitors specified above shall comply with EPA performance specifications in Title 40, CFR, Part 60, and the Department's CEM Manual. All monitoring equipment shall be located, operated and maintained so as to accurately monitor emission levels, in order to demonstrate compliance with LRAPA Title 30.

### **Section 30-035 Reporting and Testing for Solid and Infectious Waste Incinerators**

#### (1) Reporting

- (a) Compliance test results shall be reported to LRAPA within thirty (30) days of completion of the test.
- (b) All records associated with continuous monitoring data including, but not limited to, original data sheets, charts, calculations, calibration data, production records and final reports shall be maintained for a continuous period of at least two (2) years and shall be furnished to LRAPA upon request.

#### (2) Source Testing

- (a) Each solid or infectious waste incinerator must be tested to demonstrate compliance with the standards in these rules.
  - (b) Compliance testing shall be conducted at the maximum design rate using waste that is representative of normal operation. If requested by the owner/ operator, compliance testing may be performed at a lower rate; however, permit limits will be established based on the lower rate of operation.
  - (c) Unless otherwise specified by LRAPA, each solid or infectious waste incinerator shall be tested at start-up for particulate matter, hydrogen chloride, sulfur dioxide, and carbon monoxide emissions. Solid and infectious waste incinerators with potential waste feed rates of 250 tons/day or more shall be tested for dioxin/furans and NO<sub>x</sub> at startup.
- (3) Other air contaminant compliance testing. LRAPA may, at any time after the effective date of this rule, conduct or require source testing and require access to information specific to the control, recovery, or release of other air contaminants.

### **Section 30-040 Compliance for Solid and Infectious Waste Incinerators**

- (1) All solid and infectious waste incinerators constructed or modified before March 13, 1990 must demonstrate compliance with the applicable provisions of these rules one year after the effective date of this regulation. Subject to approval of LRAPA, existing data such as that collected in accordance with the requirements of an Air Contaminant Discharge Permit may be used to demonstrate compliance.
- (2) Until compliance is demonstrated, existing solid and infectious waste incinerators shall continue to be subject to all applicable permit conditions.

- (3) Solid and infectious waste incinerators constructed or modified on or after March 13, 1990 must demonstrate compliance with the applicable provisions of these rules in accordance with a schedule established by LRAPA before commencing regular operation.
- (4) Compliance with these rules does not relieve the owner or operator of the solid or infectious waste incinerator from the responsibility to comply with requirements of the Department's Solid and Hazardous Waste rules (Oregon Administrative Rules, Chapter 340, Division 93) regarding the disposal of ash generated from solid and infectious waste incinerators.

#### **Section 30-045 Emission Limitations of Crematory Incinerators**

- (1) No person shall cause to be emitted particulate matter from any crematory incinerator in excess of 0.080 grains per dry standard cubic foot of exhaust gases corrected to seven (7) percent O<sub>2</sub> at standard conditions.
- (2) Opacity. No visible emissions shall be present except for a period aggregating no more than three (3) minutes in any sixty (60)-minute period, as measured by EPA Method 9. At no time shall visible emissions exceed an opacity of 10%.
- (3) Odors. In cases where crematory incinerator operation cause odors which interfere with the use and enjoyment of property, LRAPA may require by permit the use of good practices and procedures to prevent or eliminate those odors.

#### **Section 30-050 Design and Operation of Crematory Incinerators**

- (1) Temperature and residence time. During the course of cremation, the temperature in the final combustion chamber shall be 1800° F for incinerators installed on or after March 13, 1993, and 1600° F for crematory incinerators installed on or before March 12, 1993, with a residence time of at least 0.5 second. The temperature in the final chamber must be 1400°F prior to firing material in the primary combustion chamber. At no time while firing waste shall the temperature in the final chamber fall below 1400° F for incinerators installed on or after March 13, 1993, or 1200° F for incinerators installed on or after March 13, 1993.
- (2) Operator training and certification. Each crematory incinerator shall be operated at all times under the direction of individuals who have received training necessary for proper operation. A description of the training program shall be submitted to LRAPA approval. Copies of the training certificates of the operators shall be maintained on site at all times and available to LRAPA for review.
- (3) As defined in Title 12 of these rules, crematory incinerators may only be used for incineration of human and animal bodies and appropriate containers. No other material, including infectious waste as defined by 30-010.10 of these rules, may be incinerated unless specifically authorized in LRAPA's Air Contaminant Discharge Permit. On a case-by-case basis, LRAPA may allow the cremation of human anatomical parts or fetal remains, upon request.

#### **Section 30-055 Monitoring and Reporting for Crematory Incinerators**



- (1) All crematory incinerators shall operate and maintain continuous monitoring for final combustion chamber exit temperature. Additional monitoring and reporting may be required by permit.
- (2) All records associated with continuous monitoring data including, but not limited to, original data sheets, charts, calculations, calibration data, production records and final reports shall be maintained for a continuous period of at least two (2) years and shall be furnished to LRAPA upon request.
- (3) All crematory incinerators must conduct source testing to demonstrate compliance with these rules in accordance with a schedule specified by LRAPA. The test results shall be submitted to LRAPA no later than thirty (30) days after completion of the test.

### **Section 30-060 Compliance of Crematory Incinerators**

- (1) A crematory incinerator installed on or after March 13, 1993, must demonstrate within 180 days of startup compliance with Section 30-045(1) by:
  - (a) Conducting a source test for particulate matter emissions in accordance with Sections 35-0120 through 35-0140; or
  - (b) Submitting the results of testing performed on a crematory incinerator that LRAPA agrees is comparable to the incinerator in question.