FINAL REGULATION ORDER

DIOXINS AIRBORNE TOXIC CONTROL MEASURE
MEDICAL WASTE INCINERATORS

Adopt new Section 93104, Title 17, California Code Regulations, to read as follows:

93104. Dioxins Airborne Toxic Control Measure--Medical Waste Incinerators.

(a) Definitions. For purposes of this section, the following definitions shall apply:

(1) "ARB" means the State of California Air Resources Board.

(2) "ARB Test Method 2" means the test method specified in Title 17, California Code of Regulations, Section 94102.

(3) "ARB Test Method 428" means the test method specified in Title 17, California Code of Regulations, Section 94139.

(4) "Control equipment" means any device which reduces emissions from medical waste incinerators.

(5) "Dioxins" means dibenzo-p-dioxins and dibenzofurans chlorinated in the 2, 3, 7, and 8 positions and containing 4, 5, 6, or 7 chlorine atoms and is expressed as 2, 3, 7, 8, tetrachlorinated dibenzo-para-dioxin equivalents using current California Department of Health Services toxic equivalency factors.

(6) "Facility" means every building, structure, appurtenance, installation, or improvement located on land which is under the same or common ownership or operation, and is on one or more contiguous or adjacent properties.

(7) "Medical facilities" means medical and dental offices, clinics and hospitals, skilled nursing facilities, research facilities, research laboratories, clinical laboratories, all unlicensed and licensed medical facilities, clinics and hospitals, surgery centers, diagnostic laboratories, and other providers of health care.

(8) "Medical waste incinerator" means all of the furnaces or other closed fire chambers that are located at a facility and used to dispose of waste generated at medical facilities by burning.

(9) "Uncontrolled emissions" means the dioxins emissions measured from the incinerator at a location downstream of the last combustion chamber, but prior to the air pollution control equipment.

(10) "Waste" means all discarded putrescible and nonputrescible solid, semisolid, and liquid materials, including garbage, trash, refuse, paper, rubbish, food, ashes, plastics, industrial wastes, demolition and construction wastes, equipment, instruments, utensils, appliances, manure, and human or animal solid and semisolid wastes.

(b) Requirements for medical waste incinerators that incinerate more than 25 tons of waste per year. The following requirements shall apply only to medical waste incinerators that incinerate more than 25 tons of waste per year:

(1) No person shall operate a medical waste incinerator unless:

(A) The dioxins emissions have been reduced by 99 percent or more of the uncontrolled emissions; or

(B) The dioxins emissions have been reduced to 10 nanograms or less per kilogram of waste burned.

(2) No person shall operate a medical waste incinerator unless the control equipment is installed and used in a manner which has been demonstrated to and approved by the district air pollution control officer to meet the following requirements:

(A) The flue gas temperature at the outlet of the control equipment shall not exceed 300 degrees Fahrenheit, unless is has been demonstrated to, and approved in writing, both the ARB and the district air pollution control officer that lower emissions are achieved at a higher outlet temperature; and

(B) For a single chamber incinerator, the combustion chamber shall be maintained at no less that 1800 degrees ($\pm$ 200 degrees) Fahrenheit. For a multiple chamber incinerator, the primary combustion chamber shall be maintained at no less than 1400 degrees Fahrenheit, and the secondary chamber shall be maintained at no less than 1800 degrees ($\pm$ 200 degrees) Fahrenheit. The furnace design shall provide for a residence time for combustion gas of at least one second. Residence time shall be calculated using the following equation:

$$\text{Residence Time} = \frac{V}{Q_c}$$

where:

V means the volume, as expressed in cubic feet, from the point in the incinerator where the maximum temperature has been reached until the point where the temperature has dropped to 1600°F.

Q_c means the combustion gas flow through V, as expressed in actual cubic feet per second, which is determined with ARB Test Method 2 or calculated by the following equation:

$$Q_c = Q_{stoi}\left(1+\frac{EA}{100}\right)\frac{(T_c + 460)}{528} \times \frac{1\ minute}{60\ seconds}$$

EA means the excess air, expressed as a percentage, supplied in excess of the air necessary to complete combustion.

Tc means the maximum temperature, in degrees Fahrenheit, that has been reached in the incinerator.

Q_{sto} means the amount of air theoretically required for complete combustion, as expressed in standard cubic feet per minute (SCF) and calculated as follows:

$$\frac{lb\text{-}mole\ O_2}{lb\text{-}waste} \times \frac{lb\text{-}waste}{\text{min}} \times \frac{SCF\ O_2}{lb\text{-}mole\ O_2} \times \frac{SCF\ air}{SCF\ O_2}$$

(3) No person shall operate a medical waste incinerator unless the bottom ash, fly ash and scrubber residuals are handled and stored in a manner that prevents entrainment into ambient air.

(4) the owner or operator of a medical waste incinerator shall maintain the following:

(A) A continuous data recording system which provides for each day of operation continuous recording of the primary and secondary combustion chamber temperatures; carbon monoxide emissions; the key operating parameters of the air pollution control equipment, as specified by the district Air Pollution Control

Officer; the hourly waste charging rates; and the opacity of stack emissions or other indicator of particulate matter which is approved by the district air pollution control officer;

(B) Maintenance records for the incinerator, control equipment, and monitoring equipment; and calibration records for the monitoring equipment; and

(C) Equipment for determining and recording the weight of waste charged to the incinerator.

(5) For purposes of demonstrating compliance with subsection (b)(1) of this rule the owner or operator of a medical waste incinerator shall conduct a minimum of two annual source tests for the dioxins stack emissions using ARB Test Method 428, and a minimum of three sampling runs shall be conducted for the method. Annual source tests shall be conducted until at least two consecutive tests demonstrate compliance, at which time the frequency of future source tests is at the discretion of the Air Pollution Control Officer. For purposes of determining compliance with subsection (b)(1)(A) of this rule, emissions shall be sampled simultaneously from the flue at a location downstream of the last combustion chamber, but prior to the control equipment, and from the stack during source testing. For purposes of determining compliance with subsection (b)(1)(B) of this rule, the source testing shall be conducted at the stack. The information regarding the composition (moisture content, and amount of the total waste that is infectious, pathological, hazardous, or radioactive) and feed rate of the fuel charged during the source test shall be provided with the test results. The district Air Pollution Control Officer can require additional necessary information regarding the composition of the waste. Source testing shall be conducted at the maximum waste firing capacity ($\pm$ 10 percent) allowed by the air district permit. A copy of all source test results conducted for purposes of demonstrating compliance with this rule shall be provided to the ARB at the same time that it is provided to the local air pollution control district.

(6) Any violation, malfunction, or upset condition on the incinerator, the air pollution control equipment, or the continuous data recording system shall be reported to the district within 1 hour of occurrence or by 9 a.m. the next business day if the malfunction occurs outside normal business hours and the district does not maintain a radio room or an answering machine.

(7) No person shall operate a medical waste incinerator unless each individual who operates or maintains the incinerator obtains either a certificate of training in medical waste incineration issued by the American Society of Mechanical Engineers within nine months of the commencement of the training program, or equivalent training as determined by the Air Pollution Control Officer. Copies of the training certificates for the operators and maintenance engineers shall be submitted to the districts and the original certificates shall be available for inspection at the facility with the permit to operate.

(c) Requirements for medical waste incinerators that incinerate 25 tons or less of waste per year. The following requirements shall apply to incinerators that incinerate 25 tons or less of waste per year:

(1) No person shall operate a medical waste incinerator that incinerates 25 tons or less of waste per year unless the requirements specified in subsections (b)(3), (b)(4)(c), and (b)(7) are met.

(2) The owner or operator of a medical waste incinerator that incinerates more than 10 but less than 25 tons of waste per year shall conduct one initial source test at the incinerator stack as specified in subsection (b)(5).

(D) Compliance Schedule.

(1) No later than 90 days after district adoption of regulations enacting this control measure, the owner or operator of a medical waste incinerator that incinerates more than 25 tons of waste per year shall submit to the district Air Pollution Control Officer an application for an authority to construct the equipment necessary to meet the requirements of sections (b)(1) or (b)(2), and no later than 15 months after district adoption of regulations enacting this control measure, the owner or operator of a medical waste incinerator shall be in compliance with this regulation.

(2) The owner or operator of a medical waste incinerator who intends to permanently shut down operation of the incinerator shall notify the district of the shutdown date within 90 days after district adoption of regulations enacting this control measure. The shutdown date shall be no later than six months after district adoption of regulations enacting this control measure.

(3) The owner or operator of a medical waste incinerator that incinerates 25 tons or less of waste per year who intends to remain in operation shall notify the district within 90 days after district adoption of regulations enacting this control measure. The owner or operator of a medical waste incinerator shall be in compliance with this regulation no later than 15 months after district adoption of regulations enacting this control measure.

(e) This control measure shall not apply to those incinerators which are exclusively crematoria of human or animal remains.

NOTE: Authority cited: Sections 39600, 39601, 39650 and 39666, Health and Safety Code. Reference: Sections 39650 and 39666, Health and Safety Code.

Adopted by the Air Resources Board on July 13, 1990