AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

NOTICE OF WORKSHOP

FOR DISCUSSION OF NEW PROPOSED RULE 1205 - CONTROL OF DIOXINS EMISSIONS FROM MEDICAL WASTE INCINERATORS

The San Diego County Air Pollution Control District will hold a public meeting to consider the adoption of Rule 1205 - Control of Dioxins Emissions from Medical Waste Incinerators. Comments regarding the proposed rule may be submitted in writing before, or made at the workshop, which is scheduled as follows:

DATE: Wednesday, December 18, 1991

TIME: 9:30 am - 12:00 noon

PLACE: County Operations Center
Building #2, Room 220
5555 Overland Avenue
San Diego, CA 92123

Rule 1205 is a new rule designed to reduce dioxins emissions from incinerators which burn medical waste. Dioxins are suspected human carcinogens and have been identified through the state Tanner (AB 1807) process as toxic air contaminants. In July, 1991, the California Air Resources Board adopted an Air Toxic Control Measure (ATCM) for medical waste incinerators. State law requires that local air pollution control districts adopt regulations no less stringent than the ATCM within a specified time after adoption by the Air Resources Board.

Proposed Rule 1205 is similar to the ATCM and will apply to any incinerator in San Diego County that burns waste from medical facilities. However, while the ATCM requires only good combustion operating practices for small incinerators burning less than 25 tons per year of waste, proposed Rule 1205 would impose full emission control requirements on all medical waste incinerators in San Diego County. Incinerators which are exclusively crematoria of human or animal remains will be exempt from the rule.

Rule 1205 will accomplish the following:

- Reduce uncontrolled dioxins emissions by at least 99%, by weight, or to 10 nanograms or less per kilogram of waste burned;
- Require the final combustion chamber temperature to be maintained at no less than 1800° F;
- Require that the furnace design provide for a combustion gas residence time of at least 0.3 seconds at 1800° F;
- Require installation of calibrated daily continuous monitors for combustion chamber temperature, carbon monoxide concentration, opacity, and air pollution control equipment operating parameters;

- Provide conditions and frequency of source tests for determination of initial and continuous compliance with the rule;
- Require daily recordkeeping for incinerator process information, incinerator malfunctions, maintenance and repair schedules and activities;
- Require operator training certification; and
- Specify test methods for measuring volumetric flow rates and dioxins emissions.

A schedule for compliance with these requirements is also being proposed in Rule 1205. The schedule will require the following:

- Submittal of an application for an Authority to Construct for required air pollution control equipment within 90 days after the date of rule adoption, with full compliance within 15 months rule of adoption;
- For incinerators which will no longer be operated, notification of the shutdown date within 90 days after the date of rule adoption and a shutdown date occurring no later than 180 days after rule adoption.

If you would like a copy of the proposed Rule 1205, please call Juanita Ogata at (619) 694-3307. If you have any questions concerning the proposal, please call Natalie Zlotin at (619) 694-3312 or me at (619) 694-3303.

Richard J. Smith

RICHARD J. SMITH
Deputy Director

RJS:KC:jo
11/07/91

Proposed New Rule 1205 is added to Regulation XII to read as follows:

RULE 1205. CONTROL OF DIOXINS EMISSIONS FROM MEDICAL WASTE INCINERATORS

(a) APPLICABILITY

This rule shall apply to any medical waste incinerator.

(b) EXEMPTIONS

(1) The provisions of this rule shall not apply to incinerators which are exclusively crematoria of human or animal remains as defined in Subsection (c)~~(7)~~ (8) of this rule.

(2) The provisions of this rule shall not apply to existing incinerators which incinerate less than 10 tons per year of medical waste. Any person claiming this exemption shall comply with Section (f) of this rule and shall maintain records in accordance with Subsections (e)(3), (e)(5) and (e)(6).

(c) DEFINITIONS

For the purpose of this rule the following definitions shall apply:

(1) **"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. Emissions of dioxins are expressed in terms of 2, 3, 7, 8 -Tetrachlorinated dibenzo-para-dioxin equivalents (TCDD equivalents) as determined by the California Department of Health Services. TCDD equivalents are based on the relative potency of the fifteen dioxins or furans as compared to 2, 3, 7, 8-TCDD.

(2) **"Existing Incinerator"** means a medical waste incinerator which was installed and operating on or before *(date of adoption)*.

(3) **"Final Combustion Zone"** means the area of combustion downstream of both the primary chamber and the location where 1800 ^{o} F is first obtained. This area may include sections of the flue gas duct.

(4) **"Medical Facility"** means any veterinary, medical or dental office, clinic or hospital, any veterinary, medical, or dental instructional or research facility or laboratory, skilled nursing facility, clinical laboratory, surgery center, diagnostic laboratory, or other provider of health care.

(5) **"Medical Waste"** means waste which is generated at medical facilities as a result of the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals. Medical waste includes, but is not limited to, human or animal specimen cultures, parts, tissues, body fluids, or blood, and sharps, vials, syringes, bandages, bags, or swabs.

(6) **"Medical Waste Incinerator"** means a furnace or other closed fire chamber that is used to burn medical waste.

(7) **"New Equipment"** means a medical waste incinerator installed after *(date of adoption).*

(8) **"Remains"** means whole human or animal bodies, or parts thereof. Samples of either blood, tissues, organs or body fluids shall not be considered remains if they are enclosed in or adhere to other materials, including but not limited to vials, syringes, bandages, bags, or swabs.

(9) **"Residence Time"** means the amount of time a particle in the combustion gas spends within a specified volume.

(10) **"Uncontrolled Emissions"** means the dioxins emissions measured from an incinerator at a location downstream of the final combustion chamber and upstream of the air pollution control equipment.

(11) **"Waste"** means all discarded putrescible and nonputrescible solid, semisolid, and liquid materials, including but not limited to, garbage, trash, refuse, paper, rubbish, food, ashes, plastics, industrial wastes, demolition and construction wastes, equipment, instruments, utensils, appliances, chemicals, solvents, manure, and human or animal solid, semisolid, or liquid wastes.

(d) **STANDARDS**

(1) No person shall operate a medical waste incinerator unless, at any time:

(i) The uncontrolled emissions have been reduced by 99 % or more, by weight; or

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

(2) No person shall operate a medical waste incinerator unless it meets the following requirements:

(i) The final combustion zone shall be maintained at a minimum temperature of 1800° F, (982° C).

(ii) For the combustion gas, the furnace design shall provide for a residence time in the final combustion zone of at least ~~0.3 seconds~~ 1.0 second at a minimum temperature of 1800 ° F, (982° C), unless it can be demonstrated to the satisfaction of, and approved in writing by, the Air Pollution Control Officer that the emissions standards in Subsection (d) (1) of this rule can be obtained at a shorter residence time.

Residence time shall be calculated using the following equation:

$$\text{Residence time} = \frac{V}{Qc}$$

where:

"V" = the volume of the final combustion zone, expressed in cubic feet and is measured from a location downstream of the primary chamber where the maximum temperature of 1800° F has been attained to a location further downstream where the temperature has dropped to no less than 1600° F. The volume shall not include the burner flame, nor sections in the incinerator subjected to impingement by any burner flame.

"Q_c" = the average combustion gas volumetric flow rate through the incinerator volume, expressed in actual cubic feet per second.

(iii) The furnace design shall provide for adequate mixing and turbulence of the combustion gas.

(iv) The waste charged to the incinerator~~, as measured in pounds per hour,~~ shall not exceed the maximum waste firing capacity of the incinerator, or the capacity level as specified by enforceable conditions of a District Permit to Operate <u>whichever is less</u>.

(3) No person shall operate a medical waste incinerator unless such incinerator has been equipped with air pollution control equipment that has been approved in writing by, the Air Pollution Control Officer and which:

(i) Has been installed in accordance with the Authority to Construct; and

(ii) Is operated in a manner that ensures that the flue gas temperature at the outlet of the control equipment does not exceed 300° F (149° C), unless it has been demonstrated to, and approved in writing by the Air Resources Board and the Air Pollution Control Officer that lower emissions can be achieved at a higher outlet temperature; and

(iii) Meets the requirements of Subsection (d)(1).

(4) All post-combustion waste collected from the incinerator, including but not limited to, bottom ash, fly ash and scrubber residuals, shall be handled and stored in a manner that prevents entrainment into the atmosphere.

(5) All waste streams, including but not limited to, wastewater, sludge and slurry, shall be disposed of in accordance with all local, state and federal regulations, including, but not limited to, the City of San Diego Municipal Code, Chapter VI, Article 4, Sections 64.0100 to 64.0711 and the California Code of Regulations, Title 22, Sections 66723 and 66699.

(e) MONITORING AND RECORDKEEPING REQUIREMENTS

(1) The owner or operator of a medical waste incinerator shall install and maintain continuous monitors which, at a minimum, record the following parameters:

(i) The final combustion ~~chamber~~ <u>zone</u> temperature; and

(ii) The emission concentration of carbon monoxide, as measured upstream of the air pollution control equipment, calculated as parts per million (volume) on a dry basis; and

(iii) The opacity of emissions to the atmosphere, or other indicator of particulate matter as approved by the Air Pollution Control Officer.

(2) The owner or operator of a medical waste incinerator shall calibrate all monitoring equipment on a daily basis and shall maintain calibration and maintenance records.

(3) The owner or operator of a medical waste incinerator shall maintain daily records of the following process information, including but not limited to:

(i) The hourly weight charging rates to the incinerator, using calibrated equipment which has been approved by the Air Pollution Control Officer to determine and record the weight of waste charged; and

(ii) All maintenance and repair schedules and activities~~,~~ of the incinerator or control equipment including any malfunction or failure~~. of the incinerator or control equipment.~~

(4) The owner or operator of a medical waste incinerator shall install and maintain continuous monitors which record the following operating data for air pollution control equipment, as applicable, including but not limited to:

(i) Flue gas inlet and outlet temperatures;

(ii) Liquid flow rate, supply pressure, and pH; and

(iii) Differential pressure drop of the flue gas across the control equipment.

(5) Any violation, malfunction, upset condition, or breakdown of the incinerator, the air pollution control equipment, or the continuous monitoring equipment shall be reported to the District immediately upon detection.

(6) The owner or operator of a medical waste incinerator shall maintain all records required by this section for a period not less than two years. These records shall be maintained on the premises and made available to the District upon request.

(f) TRAINING REQUIREMENTS

(1) No person shall operate or charge a medical waste incinerator unless such person 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.

(2) The original training certificates shall be maintained at the facility and made available to the District upon request.

(g) TEST METHODS

(1) Measurements of dioxins emissions subject to the requirements of Subsections (d)(1)(i) or (d)(1)(ii) of this rule shall be conducted in accordance with California Air Resources Board Test Method 428.

(2) Measurements of the combustion gas volumetric flow rate subject to Subsection (d)(2)(ii) of this rule shall be conducted in accordance with California Air Resources Board Test Method 2.

(h) SOURCE TEST REQUIREMENTS

(1) For the purposes of determining compliance with Subsections (d)(1) or (d)(2)(ii) of this rule, the owner or operator of a medical waste incinerator shall conduct a minimum of two annual source tests in accordance with a source test protocol approved by the Air Pollution Control Officer. Following the initial compliance tests, annual source tests shall be conducted until at least two consecutive annual tests demonstrate compliance. Thereafter, the frequency of future source tests shall be at the discretion of the Air Pollution Control Officer.

(2) For purposes of determining compliance with Subsection (d)(1)(i) of this rule, source testing shall be conducted simultaneously at the emissions outlet to the atmosphere and at a location in the flue prior to the control equipment but downstream of the final combustion chamber.

(3) For purposes of determining compliance with Subsection (d)(1)(ii) of this rule, source testing shall be conducted at the emissions outlet to the atmosphere.

(4) Source testing shall be conducted ~~at the maximum waste firing capacity (± 10%) of the incinerator, or~~ at the maximum permitted capacity level (± 10%) as specified by enforceable conditions of a Permit to Operate.

(5) The waste charged during the source test shall be representative of the waste routinely incinerated at the facility. The feed rate and composition of the waste charged during the source test shall be provided with the source test results, including estimated percent moisture content, and estimated infectious, pathological, hazardous, or radioactive waste content.

(7) A copy of all source test results shall be provided concurrently to the District and to the California Air Resources Board within 45 days after the source test.

(i) COMPLIANCE SCHEDULE

(1) No later than *(90 days after date of adoption)*, the owner or operator of an existing medical waste incinerator shall submit to the Air Pollution Control Officer an application for an Authority to Construct the air pollution control and monitoring equipment and any incinerator modifications necessary to meet the requirements of Section (d) of this rule.

(2) No later than *(15 months after date of adoption)*, the owner or operator of an existing medical waste incinerator shall be in compliance with all provisions of this rule.

(3) No later than *(90 days after date of adoption)*, the owner or operator of an existing medical waste incinerator who intends to permanently cease operation of the incinerator shall notify the Air Pollution Control Officer of the shutdown date. The shutdown date shall be no later than *(180 days after date of adoption)*.

(4) Any person installing new equipment shall comply with the applicable provisions of Section (d) upon initial installation and startup.