



Air Pollution Control Board
Brian P. Bilbray District 1
Dianne Jacob District 2
Pamela Slater District 3
Leon L. Williams District 4
John MacDonald District 5

Air Pollution Control Officer
R. J. Sommerville

DATE: May 18, 1993
TO: Air Pollution Control Board
SUBJECT: Adoption of new Rule 1205 - Control of Dioxins Emissions from Medical Waste Incinerators.

SUMMARY

Rule 1205 is a new rule developed to control dioxins emissions from incinerators burning medical waste. Dioxins are toxic air contaminants and human carcinogens. The rule is similar to the Airborne Toxic Control Measure (ATCM) adopted by the California Air Resources Board. It requires emission control devices be installed at facilities burning more than 25 tons per year of medical waste, and dioxins emissions be reduced by at least 99%, or to less than 10 nanograms of dioxins per kilogram of waste burned. Incinerators burning less than 25 tons per year of medical waste are exempt from control requirements but are required to keep records, minimize particulate emissions from all post-combustion wastes and provide training to persons operating the incinerator. In addition, incinerators burning more than 10 but less than 25 tons per year of medical waste are required to undergo an initial source test specified in the rule.

The only currently operating incinerator is at a veterinary hospital in San Diego County burning less than 10 tons per year of medical waste and is subject to recordkeeping, waste handling and operator training requirements of Rule 1205. Dioxins emissions from this facility are assumed to be negligible.

The State Health and Safety Code requires the District to adopt toxic control measures at least as stringent as ATCM's. Rule 1205 meets this requirement. However, consistent with Board direction of February 2, 1993 regarding implementation of new or revised regulations, the implementation date for the one facility affected by the rule will be January 1, 1994.

Since there are no currently operating facilities that will be affected by the control requirements of the rule, it will not cause any reduction in dioxins emissions in San Diego County. However, it will reduce the potential for dioxins emissions from any future medical waste incinerators. The rule will not have an adverse socioeconomic impact on San Diego County.

Issue

Should the Board adopt new Rule 1205 (Control of Dioxins Emissions from Medical Waste Incinerators) to regulate emissions of dioxins from medical waste incinerators?

Recommendation

AIR POLLUTION CONTROL OFFICER:

1. Set July 20, 1993 at 2:00 p.m., as the date and time for public hearing to consider the resolution adopting new Rule 1205 into the Rules and Regulations of the San Diego County Air Pollution Control District.

SUBJECT: Adoption of new Rule 1205 - Control of Dioxins Emissions from Medical Waste Incinerators.

2. Direct the Clerk of the Board to notice the Hearing pursuant to Section 40725 of the State Health and Safety Code.
3. Following the hearing: (a) adopt the resolution adopting Rule 1205 and, (b) make appropriate findings:
 - (i) of necessity, authority, clarity, consistency, non-duplication and reference, as required by Section 40727 of the State Health and Safety Code;
 - (ii) that the adoption of new Rule 1205 will not result in an adverse socioeconomic impact on San Diego County as further described in the January 1993 Socioeconomic Impact Analysis prepared by the District as required by Section 40728.5 of the State Health and Safety Code; and
 - (iii) that the adoption of new Rule 1205 is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Sections 15300 and 15308, as an action taken to assure the maintenance or protection of the environment and where the regulatory process involves procedures for protection of the environment.

Advisory Statement

The Air Pollution Control District Advisory Committee recommended adopting the proposed Rule 1205 at its January 29, 1992 meeting. Only two members were present.

Fiscal Impact

Adopting the proposed rule will have no fiscal impact on the District.

Alternatives

Not adopt Rule 1205. This would allow potential future emissions of dioxins from medical waste incinerators and would be inconsistent with State Health and Safety Code Section 39666. As a result, the State Air Resources Board would likely adopt a similar rule for the District.

BACKGROUND

State law requires the Air Resources Board to identify and adopt regulations to control toxic air contaminants. Air pollution control districts must then adopt regulations that are at least as stringent. Dioxins have been determined to be toxic compounds and human carcinogens.

In July 1991, the California Air Resources Board adopted an Air Toxic Control Measure (ATCM) for medical waste incinerators. Rule 1205 parallels the ATCM. It requires uncontrolled dioxins emissions from incinerators be reduced by at least 99% or be less than 10 nanograms of dioxins per kilogram of waste burned. It contains requirements for incinerator design and operation, combustion characteristics, recordkeeping, operator training, source testing procedures, and continuous monitoring of the incinerator and control equipment. In addition, it requires all post-combustion wastes be handled in a manner preventing emissions, and all waste streams be disposed in accordance with appropriate local, state and federal regulations. A schedule in the rule requires full compliance within 15 months from January 1, 1994.

SUBJECT: Adoption of new Rule 1205 - Control of Dioxins Emissions from Medical Waste Incinerators.

To comply with Rule 1205, an operator burning more than 25 tons per year of medical waste must install an air pollution control system. Facilities burning less than 25 tons per year are exempt from control requirements but have to keep records of the amount of waste being incinerated, handle ash in a manner that prevents its entrainment into ambient air, and provide training to the equipment operators. Additionally, operators of medical waste incinerators burning more than 10 tons per year have to conduct an initial source test specified in the rule.

The only one presently operating medical waste incinerator in San Diego County burns less than 10 tons per year of medical waste. Total dioxins emissions from this incinerator are presumed to be negligible. The operator will be required only to keep records, handle post-combustion wastes in an appropriate manner and obtain a certificate of training. Some of these requirements have already been implemented as a result of conditions specified in the District's Permit to Operate for this incinerator.

Section 40728.5 of the State Health and Safety Code requires the District to perform a socio-economic impact assessment for rules and regulations that will significantly affect air quality or emission limitations. The socioeconomic impact assessment must determine how the proposed rules affect employment and the economy of San Diego County. Since the rule imposes only waste handling and operator training requirements on one veterinary hospital in San Diego County, the socioeconomic impacts can be readily identified. The District has prepared the required socioeconomic impact assessment and concluded that Rule 1205 is expected to have minimal impacts on employment and the economy in San Diego County.

On February 2, 1993, the Air Pollution Control Board directed that, with the exception of a Regulation requested by business or Regulation for which a socioeconomic impact assessment is not required, no new or revised regulation shall be implemented during the 1993 calendar year, unless specifically ordered by Federal or State law. In accordance with State law, Rule 1205 must be adopted by the District as soon as possible. The ATCM regulating dioxins emissions from medical waste incinerators was adopted by the Air Resources Board in 1991. However, the requirements applicable to the one veterinary hospital will not become effective until January 1, 1994, consistent with Board direction.

In addition, the California Environmental Quality Act requires an environmental review for certain actions. The adoption of new Rule 1205 will not have a significant effect on the environment and is categorically exempt from the provision of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Sections 15300 and 15308, as an action taken to assure the maintenance or protection of the environment where the regulatory process involves procedures for protection of the environment.

A public workshop on new Rule 1205 was held on December 18, 1991. The workshop report and the socioeconomic impact assessment are attached.

Concurrence:

DAVID E. JANSSEN
Chief Administrative Officer

Respectfully submitted,



R. J. SOMMERVILLE
Air Pollution Control Officer

**AIR POLLUTION CONTROL BOARD
AGENDA ITEM
INFORMATION SHEET**

SUBJECT: Adoption of Rule 1205 - Control of Dioxins Emissions from
Medcial Waste Incinerators

SUPV DIST.: All

COUNTY COUNSEL APPROVAL: Form and Legality ☒ Yes ☐ N/A
☐ Standard Form ☐ Ordinance ☒ Resolution

AUDITOR APPROVAL: ☒ N/A ☐ Yes 4 VOTES: ☐ Yes ☒ No

FINANCIAL MANAGEMENT REVIEW: ☐ Yes ☒ No

CONTRACT REVIEW PANEL: ☐ Approved _____ ☒ N/A

CONTRACT NUMBER(S): N/A

PREVIOUS RELEVANT BOARD ACTION: N/A

BOARD POLICIES APPLICABLE: N/A

CITIZEN COMMITTEE STATEMENT: The Air Pollution Control District Advisory
Committee recommended adoption of new
Rule 1205.

CONCURRENCES: N/A

ORIGINATING DEPARTMENT: Air Pollution Control District

CONTACT PERSON: Richard J. Smith, Deputy Director 750-3303 MS: 0-176



DEPARTMENT AUTHORIZED REPRESENTATIVE

MAY 18, 1993
MEETING DATE

FINDINGS OF THE SAN DIEGO COUNTY AIR POLLUTION
CONTROL BOARD IN RESPECT TO ADOPTION OF
A NEW RULE 1205

- A. Pursuant to section 40727 of the Health and Safety Code, the Air Pollution Control Board of the San Diego County Air Pollution Control District makes the following findings:
1. (Necessity) The adoption of the proposed new District Rule 1205 is necessary for the District to satisfy the requirements of Health and Safety Code section 39666.
 2. (Authority) The adoption of the proposed new rule is authorized by Health and Safety Code sections 40001, 40702, and 39666.
 3. (Clarity) The proposed new rule is written so that its meaning can be easily understood by persons directly affected by the rule.
 4. (Consistency) The proposed new rule is in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and state and federal regulations.
 5. (Nonduplication) The proposed new rule does not impose the same requirements as an existing state or federal regulation.
 6. (Reference) The adoption of the proposed new rule implements Health and Safety Code section 39666 by adopting airborne toxic control measures equally as effective as those adopted by the state Air Resources Board in 17 California Code of Regulations section 93104.
- B. The Air Pollution Control Board further finds that the District has performed an assessment of socioeconomic impacts pursuant to Health and Safety Code section 40728.5, and the adoption of the proposed new rule is cost effective and will not result in an adverse socioeconomic impact.
- C. The Air Pollution Control Board further finds that the adoption of the proposed rule will not have a significant effect on the environment, and is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, title 14, sections 15300 and 15308, as an action taken to assure the protection of the environment which will not have a significant effect on the environment and where the regulatory process involves procedures for protection of the environment.
- D. The Air Pollution Control Board further finds in accordance with Health and Safety Code section 40001 that the adoption of the proposed rule is necessary to satisfy state law, and that the proposed rule will promote the attainment of state and federal ambient air quality standards.

APCD Meeting 7/20/93
Agenda Item #1

OFFICIAL RECORD

Clerk of the Board of Supervisors

Exhibit No. _____ Agenda No. 1 APCB

Meeting Date 7.20.93 ()

Presented by APCB

Document No. 755508

THOMAS J. PASTUSZKA
Clerk of the Board of Supervisors

NEW ADDED RULE

Re Rules and Regulations of the)
Air Pollution Control District)
of San Diego County)

**RESOLUTION ADDING RULE 1205
TO REGULATION XII
OF THE RULES AND REGULATIONS OF THE
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT**

On motion of Member MacDonald, seconded by Member Slater the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board, pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been had relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be and hereby are amended as follows:

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)(9) of this rule.

(2) The provisions of this rule shall not apply to existing incinerators which incinerate less than 25 tons per year of medical waste, provided that effective January 1, 1994, any person claiming this exemption complies with Subsections (d)(4), (d)(5) and

Section (f) of this rule and maintains records in accordance with Subsections (e)(3), (e)(5) and (e)(6). Owners or operators of existing incinerators which incinerate more than 10 but less than 25 tons per year of medical waste shall also conduct an initial source test in accordance with Sections (g) and (h).

(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 incinerator volume downstream of both the primary chamber and the location where a temperature of $1800 \pm 200^{\circ}\text{F}$, ($982 \pm 93^{\circ}\text{C}$) is first obtained. This volume may include sections of the flue gas duct.

(4) **"Incinerator"** means the same as "medical waste incinerator" defined in Subsection (c)(7).

(5) **"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.

(6) **"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.

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

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

(9) **"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.

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

(11) **"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.

(12) "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 $1800 \pm 200^{\circ}\text{F}$, ($982 \pm 93^{\circ}\text{C}$).

(ii) For the combustion gas, the furnace design shall provide for a residence time in the final combustion zone of at least 1.0 second at a minimum temperature of $1800 \pm 200^{\circ}\text{F}$, ($982 \pm 93^{\circ}\text{C}$), 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:

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

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 $1800 \pm 200^{\circ}\text{F}$, ($982 \pm 93^{\circ}\text{C}$) has been attained to a location further downstream where the temperature has dropped to no less than 1600°F (871°C). 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, and determined as required by Subsection (g)(2).

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

(iv) The waste charged to the incinerator 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 whichever is less.

(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 zone 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 and control equipment including any malfunction or failure.

(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, liquid 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 Subsection (b)(2) or 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.

The combustion gas volumetric flow rate shall be corrected to the maximum combustion chamber temperature (T_c) and the chamber pressure (P_c).

Alternative methods for determining the combustion gas volumetric flow rate may be used provided the alternative method has been submitted to, and approved in writing by, the Air Pollution Control Officer prior to testing.

(3) A source test protocol shall be submitted to, and approved in writing by, the Air Pollution Control Officer prior to testing.

(h) SOURCE TEST REQUIREMENTS

(1) For the purpose of maintaining exemption from this rule in accordance with Subsection (b)(2), the owner or operator of an existing incinerator shall conduct an initial source test no later than July 1, 1994.

(2) 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.

(3) 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.

(4) 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.

(5) Source testing shall be conducted at the maximum permitted capacity level ($\pm 10\%$) as specified by enforceable conditions of a Permit to Operate.

(6) 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 January 1, 1994)*, 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 January 1, 1994)*, 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 January 1, 1994)*, 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 January 1, 1994)*.

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

IT IS FURTHER RESOLVED AND ORDERED that the subject addition of Rule 1205 to Regulation XII shall take effect January 1, 1994.

PASSED AND ADOPTED by the Air Pollution Control Board of the San Diego County Air Pollution Control District, State of California, this 20th day of July, 1993 by the following votes:

AYES: Bilbray, Slater, MacDonald
NOES: None
ABSENT: Jacob, Williams

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY L. Dutton

DEPUTY

STATE OF CALIFORNIA)
County of San Diego)

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the Minutes of the Air Pollution Control Board.

THOMAS J. PASTUSZKA
Clerk of the Air Pollution Control
District

By Maritza C. Codrington

Maritza C. Codrington, Deputy

WORKSHOP REPORT
RULE 1205
CONTROL OF DIOXINS EMISSIONS FROM MEDICAL WASTE
INCINERATORS

A workshop notice was mailed to owners and operators of incinerators in San Diego County. Notices were also mailed to all Economic Development Corporations and Chambers of Commerce in San Diego County, the U. S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on December 18, 1991 and was attended by two people. Written comments were received from the ARB. The comments and District responses are as follows:

WORKSHOP COMMENT:

If a medical waste incinerator is exempt from the rule, would the temperature requirement for the final combustion zone still apply?

DISTRICT RESPONSE:

No. As indicated in Subsection (b)(2) of the rule, any person claiming exemption due to low throughput would only have to provide training for operators of the incinerator and maintain daily records of the waste being incinerated.

ARB COMMENT:

In Section (b), the reference to another portion of the rule is incorrect. Instead of referencing Subsection (c)(7), it should say Subsection (c)(8).

DISTRICT RESPONSE:

The correction has been made. In the revised rule, the correct reference is Subsection (c)(9).

ARB COMMENT:

For clarity in the rule, the District should remove the last sentence in Subsection (c)(1).

DISTRICT RESPONSE:

The District disagrees. The last sentence was included to provide information on how 2, 3, 7, 8 -tetrachlorinated dibenzo-para-dioxins equivalents were determined. Omitting this sentence would not add further clarity to the rule or definition.

ARB COMMENT:

For clarity in the rule, the word "area" in Subsection (c)(3) should be replaced with "volume".

DISTRICT RESPONSE:

Subsection (c)(3) has been revised accordingly.

ARB COMMENT:

For clarity in the rule, the phrase "the amount of time particle" in Subsection (c)(9) should be replaced with "the amount of time a particle...".

DISTRICT RESPONSE:

The correction has been made. In the revised rule, Subsection (c)(9) is now (c)(10).

ARB COMMENT:

The definition of Qc in Subsection (d)(2)(ii) should refer to Subsection (g)(2) which identifies the required measurement method. It is suggested to add the following language to the definition of Qc: "...and measured as required by Subsection (g)(2)."

DISTRICT RESPONSE:

Subsection (g)(2) has been revised accordingly.

ARB COMMENT:

For clarity in the rule, the District should make it clear in Subsection (e)(3)(ii) that the source shall maintain daily records of all maintenance and repair schedules and activities, including any malfunction or failure, for the incinerator and air pollution control equipment.

DISTRICT RESPONSE:

Subsection (e)(3) requires the owner or operator to maintain daily records of process information listed in Subsection (e)(3)(ii) including all maintenance and repair schedules and activities, malfunctions or failures. Subsection (e)(3)(ii) has been revised; "Incinerator or control equipment" has been changed to "incinerator and control equipment".

ARB COMMENT:

In Subsection (g)(2), the District should be aware that Qc measured at the sampling points must be corrected for the temperature and pressure differences that exist between the sampling point and the combustion chamber. Although it may be acceptable to assume constant pressure in some cases, the District may need to use an alternative approach when this assumption cannot be justified or when a measurement cannot be made.

DISTRICT RESPONSE:

Language has been added to Subsection (g)(2) to ensure that Qc is corrected to the temperature and pressure of the combustion chamber and that alternative methods may be used at the discretion of the Air Pollution Control Officer.

ARB COMMENT:

In Subsection (g)(2), the District should consider specifying in the rule that the high resolution mass spectrometry (HRMS) option of ARB Method 428 be used to determine compliance with the regulation, since facilities which comply with the 10 ng/kg standard would emit very low concentrations of dioxins and furans. High resolution mass spectrometry offers better selectivity and lower detection limits when compared to low resolution mass spectrometry (LRMS).

DISTRICT RESPONSE:

The District has reviewed Method 428 and has determined to leave the decision to use HRMS or LRMS to the testing company. However, language has been added to Subsection (g)(2) which states that a test protocol must be submitted and approved by the District prior to testing. This will ensure that the appropriate mass-spectrometry method is used if very low concentrations of dioxins have to be measured.

ARB COMMENT:

In Subsection (h)(4), the District should remove the option to conduct source testing at the maximum firing capacity ($\pm 10\%$) of the incinerator, and just require that testing shall be conducted at the maximum permitted capacity ($\pm 10\%$) contained in the Permit to Operate. This requirement is contained in the Board-approved ATCM.

DISTRICT RESPONSE:

The District agrees that the maximum permitted capacity level is more appropriate than the maximum firing capacity. The rule has been changed to delete the options.

ARB COMMENT:

In Subsection (h)(5), the District should consider incorporating into its rule methods for estimating the amount of waste that is infectious, pathological, hazardous, or radioactive.

The District should consider specifying the method for determining the representativeness of the waste to be used for the compliance test.

DISTRICT RESPONSE:

The District has determined that the type of waste can vary from facility to facility. Methods for estimating the type of waste would be best accomplished on a case-by-case basis. Therefore, methods should not be included in the rule.

Likewise, determining the representativeness of the waste would be best accomplished on a case-by-case basis. During the permitting process, applicants will be required to provide information on the waste incinerated. This information could be used to validate the waste used during source testing.

KC:jo

SOCIOECONOMIC IMPACT ASSESSMENT

**PROPOSED RULE 1205 -
CONTROL OF DIOXINS EMISSIONS FROM
MEDICAL WASTE INCINERATORS**

**San Diego County
Air Pollution Control District**

May 1993

Introduction

Section 40728.5 of the state Health and Safety Code requires the Air Pollution Control District (District) to perform a socioeconomic impact assessment for any new or amended rules that will significantly affect air quality or emission limitations. This report contains the District's assessment of the socioeconomic impacts of proposed District Rule 1205. Rule 1205 is a new rule developed to control dioxins emissions from incinerators burning medical waste. The rule is similar to the Air Toxics Control Measure (ATCM) for medical waste incinerators adopted by the California Air Resources Board (ARB) in July 1991.

State law requires the ARB identify toxic air contaminants and adopt regulations to control their emissions. Air pollution control districts throughout California must then adopt regulations at least as stringent as the ATCM. In 1986, the California Air Resources Board determined that dioxins are toxic air contaminants and human carcinogens. In July 1991, ARB adopted an Air Toxic Control Measure regulating dioxins emissions from medical waste incinerators. The ATCM required dioxins emissions controls for incinerators burning 25 or more tons of medical waste per year. Operator training and proper incinerator operation were required for incinerators burning less than 25 tons per year. At least one dioxins emissions source test was required for incinerators burning greater than 10 but less than 25 tons per year of medical waste. Rule 1205 parallels the ATCM in its stringency.

Similar to the ATCM, Rule 1205 requires uncontrolled dioxins emissions from affected incinerators be reduced by at least 99% or to less than 10 nanograms of dioxins per kilogram of waste burned. To comply with these limits, an operator of an affected incinerator must install an air pollution control system. The rule also contains requirements for incinerator design and operation, combustion characteristics, recordkeeping, operator training, source testing procedures, and continuous monitoring of the incinerator and control equipment. Incinerators that burn less than 25 tons per year are not subject to the emissions control requirements of Rule 1205 but operators will be required to keep specified records and obtain a certificate of incinerator training. An initial source test will be required for incinerators that burn more than 10 but less than 25 tons per year of medical waste. Rule 1205 also requires that post-combustion wastes (e.g. ash) from all incinerators be handled in a manner that prevents emissions, and that all waste streams be disposed of in accordance with applicable local, state and federal regulations. Finally, Rule 1205 requires full compliance within 15 months from January 1, 1994.

ARB has estimated total dioxins emissions from all medical waste incinerators in California to be 16 grams per year. In San Diego County, total dioxins emissions from such incinerators were estimated to be 106 milligrams in 1988 and 10 milligrams in 1991. The lower emissions in 1991 were the result of a large medical waste incinerator being taken out of operation. Since then another large medical waste incinerator in San Diego County was taken out of service. As a result, it is assumed that current dioxins emissions in San Diego County are negligible.

There is presently only one operating medical waste incinerator in San Diego County. It burns less than 10 tons per year of veterinary hospital waste and thus will only be subject to the recordkeeping and operator training requirements of the rule. Total dioxins emissions from this incinerator are presumed to be negligible.

The Necessity of Adopting Rule 1205

In 1986, the Air Resources Board identified dioxins as toxic air contaminants pursuant to California Health and Safety Code, Section 39662. As part of the toxic air contaminant identification process, the Air Resources Board determined there is insufficient evidence to estimate a safe threshold exposure level for dioxins below which no significant adverse health effects are anticipated. For toxic contaminants where there is no safe threshold exposure level, control measures are designed to reduce emissions to the lowest level achievable through the application of best available control technology.

Incinerators of medical waste were determined to be one of the largest sources of dioxins emissions in California. In 1991, the Air Resources Board, with the participation of local air pollution control districts and in consultation with affected industries and other interested parties, adopted an air toxics control measure (ATCM) to regulate dioxins emissions from medical waste incinerators. Health and Safety Code Sec. 39666 (d) requires local air districts adopt a control measure that is equally effective or more stringent than the ATCM. Rule 1205 will fulfill this requirement.

Impact Assessment

As specified in the Health and Safety Code, "socioeconomic impact" means the following:

- (1) The type of industries or business, including small business, affected by the rule or regulation.
- (2) The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.
- (3) The range of probable costs, including costs to industry or business, including small business, of the rule or regulation.
- (4) The availability and cost effectiveness of alternatives to the rule or regulation being proposed or amended.
- (5) The emission reduction potential of the rule or regulation.

- (6) The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air standards.

Item 6 is discussed in the preceding section. The remaining items are discussed below.

Types of Industries Affected by Rule 1205

This rule would directly affect one San Diego veterinary hospital (SIC 0742) which operates an incinerator for veterinary wastes and which is a part of a non-profit organization. In the future, Rule 1205 could potentially affect the hospital industry [hospitals (SIC 806) and convalescent homes (SIC 805)], but only if their wastes are incinerated by waste disposal companies in lieu of alternative disposal practices. Future siting of new medical waste incinerators are unlikely due to high costs and availability of alternative disposal techniques. One hospital in San Diego County is considering installing a high temperature plasma waste destruction system, however, that equipment will not be subject to Rule 1205. Another hospital is considering a system that uses chemical oxidants to disinfect wastes. This system also will not be subject to Rule 1205.

Rule 1205 is not expected to have any effect on small business in San Diego County since none of the medical waste disposal facilities in San Diego County are small businesses, as defined in the California Government Code.¹

Employment Impacts

- a. Impact on the facility subject to recordkeeping, post-combustion waste handling and operating requirements.

¹ "Small business " as specified in the California Government Code Section 11342(e) is defined in part as

- 1) A service activity whose annual gross receipts do not exceed two million dollars (\$2,000,000), and;
- 2) A health care facility whose annual gross receipts do not exceed one million, five hundred thousand dollars (\$1,500,000) or whose capacity does not exceed 150 beds.

"Small business" does not include any entity organized as a nonprofit institution.

The one operating veterinary waste incinerator at this facility will not be required to install expensive emission controls because the amount of waste it burns (approximately 1.5 tons per year) falls well below the proposed 25 tons per year exemption level for controls in Rule 1205. No additional personnel will be necessary for recordkeeping and post-combustion waste handling, because the existing APCD permit already contains such requirements. The incinerator operators will only be required to complete additional training. Therefore, adopting Rule 1205 is not expected to impact current or future employment at this facility.

b. Impact on employment in San Diego County.

The adoption of Rule 1205 is not expected to have any impact on existing jobs or the creation of new jobs in San Diego County. There are no existing conventional medical waste incinerators in the County that will be subject to the rule's control requirements. In addition, the potential for conventional medical waste incinerators to be constructed in the future is remote because of available alternatives and air pollution control requirements, related mostly to toxic air contaminants such as dioxins and other chlorinated compounds, hydrochloric acid, and heavy metals. Future medical waste disposal facilities using alternatives to incineration will not be subject to Rule 1205. Given the availability of such alternatives, future increased needs for disposal services should be met without reliance on constructing new incinerators that would be subject to Rule 1205.

Economic Impacts and Range of Probable Costs

Rule 1205 would financially affect only one veterinary hospital operating in San Diego County. This facility is part of a nonprofit organization. Its incinerator is used primarily to cremate animal remains and incinerate a portion of its veterinary waste. Due to the small amount of waste incinerated (1.5 tons per year), this facility will be exempt from the dioxins emission control requirements of the rule. However, this facility will be subject to operator training and recordkeeping provisions. The probable one-time cost of operator training is estimated to be \$1,000 per operator. Assuming the facility will have 3 people receive training, the total cost will be about \$3,000. The facility is already required by its existing APCD permit to keep records of waste incinerated as mandated by the proposed rule. In addition, the permit contains requirements for post-combustion waste handling. Therefore, the facility will not incur any additional cost as a result of the recordkeeping and waste handling requirements of Rule 1205.

During 1991, one waste disposal company in San Diego County operated a medical waste incinerator to dispose of about 3% of the medical waste it handled. The remaining 97% was autoclaved and then disposed of in a municipal landfill. The incinerator was taken out of service in 1991 in part due to the expected costs of dioxins and other

toxic air contaminants testing required by the state Toxics Hot Spots program. The company continues to operate its disposal business, autoclaving 97% of the medical waste it handles, but now ships the remaining 3% previously incinerated in San Diego County to a regional incinerator in Northern California. Because the incinerator was taken out of operation prior to developing Rule 1205, the costs associated with this change are not considered attributable to the impact of the Rule.

The incremental increase in medical waste disposal costs that result from the ATCM adopted by the Air Resources Board has been estimated to be from \$0.10 to \$0.35 per pound of medical waste, depending upon whether on-site emission controls are installed, offsite incineration with emission controls are used or alternative disposal techniques are selected. Assuming a worst-case incremental cost of \$0.35 per pound, ARB estimated the increased passed down costs of patient care would be \$0.43 per bed per day, compared to a 1991 average patient care cost of \$800 per bed per day.

Availability and Cost-Effectiveness of Alternatives

There are three alternatives to Rule 1205: not adopt the rule, adopt a less stringent rule, and adopt a more stringent rule.

The first and second alternative are not viable because they are inconsistent with Health and Safety Code Section 39666(d) which requires Districts to "adopt and enforce equally effective or more stringent control measures than the ATCMs adopted by the state board." If the District did not adopt Rule 1205, the Air Resources Board would likely adopt a rule for the District similar to the ATCM.

In the third alternative (adopt a more stringent rule such as in the Bay Area or South Coast air quality management districts), Rule 1205 could be proposed with no exemptions for emission controls for small incinerators. This would require the one operating veterinary hospital incinerator to either install emission controls that would cost several hundred thousand dollars, or shutdown its incinerator and change to either on-site steam sterilization followed by off-site disposal (landfill) or off-site sterilization or incineration followed by off-site disposal. Either alternative would increase waste disposal cost for this non-profit organization by approximately \$1000 per year. However, some of the veterinary wastes this facility incinerates are from quarantined animals and/or animals too large to be reasonably isolated during transport offsite and too large for on-site autoclaving. If Rule 1205 were revised to have no exemption level, this non-profit facility could be required to install extremely expensive emission controls and conduct very expensive emissions source testing.

Benefits and Emission Reduction Potential

Dioxins have been identified by the Air Resources Board as toxic air contaminants and are suspected human carcinogens. Although Rule 1205 will require the control of dioxins emissions from medical waste incinerators, it will not result in any actual emissions reductions in current dioxins emissions since the only operating incinerator in San Diego County that would be affected by the rule is exempt from control requirements due to its size. However, Rule 1205 will require any new incinerator burning 25 tons or more per year to first reduce uncontrolled dioxins emissions by at least 99% by weight, or to 10 nanograms per kilogram of waste burned.

The Air Resources Board has estimated that, statewide, adopting the requirements of the ATCM will reduce the maximum potential individual lifetime excess cancer risk from dioxins emissions from a range of 1 to 246 per million to less than 1 to 3 chances per million. In addition, the estimated number of statewide excess cancer cases would be reduced from 2 cases per year to far less than one.

In San Diego County, one large medical waste incinerator (inactive since 1989) at a hospital located in a populated residential area was tested for toxic air contaminant emissions in 1988. The resulting emissions data were evaluated for potential public health risks. The District estimated that maximum lifetime excess cancer risks for the public from the incinerator ranged from 35 to 750 in a million of which dioxins emissions represented one-half. If this incinerator were still in operation, application of Rule 1205 requirements would reduce the maximum public health risks to less than 10 in a million. (Emission controls for dioxins would also effectively control heavy metal emissions that contributed the remainder of the risk.)

Conclusions

Based on the above analysis, Rule 1205 is expected to have minimal impacts on employment and the economy in San Diego County and is not expected to cause any undue hardships on medical facilities or disposal companies as they currently operate. While Rule 1205 will not cause an immediate reduction in dioxins emissions in San Diego County, it will significantly reduce the potential for new dioxins emissions from any future medical waste incinerators.