CA

66266.104 Standards to Control Organic Emissions

(a)

DRE standard- (1) General. Except as provided in subsection (a)(3) of this section, a boiler or industrial furnace burning hazardous waste shall achieve a destruction and removal efficiency (DRE) of 99.99% for all organic hazardous constituents in the waste feed. To demonstrate conformance with this requirement, 99.99% DRE shall be demonstrated during a trial burn for each principal organic hazardous constituent (POHC) designated (under subsection (a)(2) of this section) in its permit for each waste feed. DRE is determined for each POHC from the following equation: Click here to view image where: Win = Mass feed rate of one principal organic hazardous constituent (POHC) in the hazardous waste fired to the boiler or industrial furnace; and Wout = Mass emission rate of the same POHC present in stack gas prior to release to the atmosphere. (2) Designation of POHCs. Principal organic hazardous constituents (POHCs) are those compounds for which compliance with the DRE requirements of this section shall be demonstrated in a trial burn in conformance with procedures prescribed in section 66270.66 of chapter 20 of this division. One or more POHCs shall be designated by the Director for each waste feed to be burned. POHCs shall be designated based on the degree of difficulty of destruction of the organic constituents in the waste and on their concentrations or mass in the waste feed considering the results of waste analyses submitted with part B of the permit

application. POHCs are most likely to be selected from among those compounds listed in appendix VIII of chapter 11 of this division that are also present in the normal waste feed. However, if the applicant demonstrates to the Department's satisfaction that a compound not listed in appendix VIII or not present in the normal waste feed is a suitable indicator of compliance with the DRE requirements of this section, that compound may be designated as a POHC. Such POHCs need not be toxic or organic compounds (3) Dioxin-listed waste. A boiler or industrial furnace burning hazardous waste containing (or derived from) US EPA Hazardous Wastes Nos. F020, F021, F022, F023, F026, or F027 shall achieve a destruction and removal efficiency (DRE) of 99.9999% for each POHC designated (under subsection (a)(2) of this section) in its permit. This performance shall be demonstrated on POHCs that are more difficult to burn than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in subsection (a)(1) of this section. In addition, the owner or operator of the boiler or industrial furnace shall notify the Director of intent to burn US EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027. (4) Automatic waiver of DRE trial burn. Owners and operators of boilers operated under the special operating requirements provided by section 66266.110 are considered to be in compliance with the DRE standard of subsection (a)(1) of this section and are exempt from the DRE trial burn. (5) Low risk waste. Owners and operators of boilers or industrial furnaces that burn hazardous waste in compliance with the requirements of section 66266.109(a) are considered to be in compliance with the DRE standard of subsection (a)(1) of this section and are exempt from the DRE trial burn.

(1)

General. Except as provided in subsection (a)(3) of this section, a boiler or industrial

furnace burning hazardous waste shall achieve a destruction and removal efficiency (DRE) of 99.99% for all organic hazardous constituents in the waste feed. To demonstrate conformance with this requirement, 99.99% DRE shall be demonstrated during a trial burn for each principal organic hazardous constituent (POHC) designated (under subsection (a)(2) of this section) in its permit for each waste feed. DRE is determined for each POHC from the following equation: Click here to view image where: Win = Mass feed rate of one principal organic hazardous constituent (POHC) in the hazardous waste fired to the boiler or industrial furnace; and Wout = Mass emission rate of the same POHC present in stack gas prior to release to the atmosphere.

(2)

Designation of POHCs. Principal organic hazardous constituents (POHCs) are those compounds for which compliance with the DRE requirements of this section shall be demonstrated in a trial burn in conformance with procedures prescribed in section 66270.66 of chapter 20 of this division. One or more POHCs shall be designated by the Director for each waste feed to be burned. POHCs shall be designated based on the degree of difficulty of destruction of the organic constituents in the waste and on their concentrations or mass in the waste feed considering the results of waste analyses submitted with part B of the permit application. POHCs are most likely to be selected from among those compounds listed in appendix VIII of chapter 11 of this division that are also present in the normal waste feed. However, if the applicant demonstrates to the Department's satisfaction that a compound not listed in appendix VIII or not present in the normal waste feed is a suitable indicator of compliance with the DRE requirements of this section, that compound may be designated as a POHC. Such POHCs need not be toxic or organic compounds

(3)

Dioxin-listed waste. A boiler or industrial furnace burning hazardous waste containing

(or derived from) US EPA Hazardous Wastes Nos. F020, F021, F022, F023, F026, or F027 shall achieve a destruction and removal efficiency (DRE) of 99.9999% for each POHC designated (under subsection (a)(2) of this section) in its permit. This performance shall be demonstrated on POHCs that are more difficult to burn than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in subsection (a)(1) of this section. In addition, the owner or operator of the boiler or industrial furnace shall notify the Director of intent to burn US EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027.

(4)

Automatic waiver of DRE trial burn. Owners and operators of boilers operated under the special operating requirements provided by section 66266.110 are considered to be in compliance with the DRE standard of subsection (a)(1) of this section and are exempt from the DRE trial burn.

(5)

Low risk waste. Owners and operators of boilers or industrial furnaces that burn hazardous waste in compliance with the requirements of section 66266.109(a) are considered to be in compliance with the DRE standard of subsection (a)(1) of this section and are exempt from the DRE trial burn.

(b)

Carbon monoxide standard. (1) Except as provided in subsection (c) of this section, the stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste cannot exceed 100 ppmv on an hourly rolling average basis (i.e., over any 60 minute period), continuously corrected to 7 percent oxygen, dry gas basis. (2) CO and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial

Furnaces Burning Hazardous Waste" in appendix IX of this chapter. (3) Compliance with the 100 ppmv CO limit shall be demonstrated during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). To demonstrate compliance, the highest hourly rolling average CO level during any valid run of the trial burn or compliance test shall not exceed 100 ppmv.

(1)

Except as provided in subsection (c) of this section, the stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste cannot exceed 100 ppmv on an hourly rolling average basis (i.e., over any 60 minute period), continuously corrected to 7 percent oxygen, dry gas basis.

(2)

CO and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix IX of this chapter.

(3)

Compliance with the 100 ppmv CO limit shall be demonstrated during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). To demonstrate compliance, the highest hourly rolling average CO level during any valid run of the trial burn or compliance test shall not exceed 100 ppmv.

(c)

Alternative carbon monoxide standard. (1) The stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste may exceed the 100 ppmv limit provided that stack gas concentrations of

hydrocarbons (HC) do not exceed 20 ppmv, except as provided by subsection (f) of this section for certain industrial furnaces. (2) HC limits shall be established under this section on an hourly rolling average basis (i.e., over any 60 minute period), reported as propane, and continuously corrected to 7 percent oxygen, dry gas basis. (3) HC shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix IX of this chapter. CO and oxygen shall be continuously monitored in conformance with subsection (b)(2) of this section. (4) The alternative CO standard is established based on CO data during the trial burn (for a new facility) and the compliance test (for an interim status facility). The alternative CO standard is the average over all valid runs of the highest hourly average CO level for each run. The CO limit is implemented on an hourly rolling average basis, and continuously corrected to 7 percent oxygen, dry gas basis.

(1)

The stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste may exceed the 100 ppmv limit provided that stack gas concentrations of hydrocarbons (HC) do not exceed 20 ppmv, except as provided by subsection (f) of this section for certain industrial furnaces.

(2)

HC limits shall be established under this section on an hourly rolling average basis (i.e., over any 60 minute period), reported as propane, and continuously corrected to 7 percent oxygen, dry gas basis.

(3)

HC shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons for Incinerators, Boilers, and

Industrial Furnaces Burning Hazardous Waste" in appendix IX of this chapter. CO and oxygen shall be continuously monitored in conformance with subsection (b)(2) of this section.

(4)

The alternative CO standard is established based on CO data during the trial burn (for a new facility) and the compliance test (for an interim status facility). The alternative CO standard is the average over all valid runs of the highest hourly average CO level for each run. The CO limit is implemented on an hourly rolling average basis, and continuously corrected to 7 percent oxygen, dry gas basis.

(d)

Special requirements for furnaces. Owners and operators of industrial furnaces (e.g., kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see section 66266.103(a)(5)(B)) at any location other than the end where products are normally discharged and where fuels are normally fired shall comply with the hydrocarbon limits provided by subsections (c) or (f) of this section irrespective of whether stack gas CO concentrations meet the 100 ppmv limit of subsection (b) of this section.

(e)

Controls for dioxins and furans. Owners and operators of boilers and industrial furnaces that are equipped with a dry particulate matter control device that operates within the temperature range of 450-750 °F, and industrial furnaces operating under an alternative hydrocarbon limit established under subsection (f) of this section shall conduct a site-specific risk assessment as follows to demonstrate that emissions of chlorinated dibenzo-p-dioxins and dibenzofurans do not result in an increased lifetime cancer risk to the hypothetical maximum exposed individual (MEI) exceeding 1 in 100,000: (1) During the trial burn (for

new facilities or an interim status facility applying for a permit) or compliance test (for interim status facilities), determine emission rates of the tetra-octa congeners of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources, found in U.S. EPA Publication SW-846, as incorporated by reference in Section 66260.11 of this Division. (2) Estimate the 2,3,7,8-TCDD toxicity equivalence of the tetra-octa CDDs/CDFs congeners using "Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners" in appendix IX of this chapter. Multiply the emission rates of CDD/CDF congeners with a toxicity equivalence greater than zero (see the procedure) by the calculated toxicity equivalence factor to estimate the equivalent emission rate of 2,3,7,8-TCDD; (3) Conduct dispersion modeling using methods recommended in appendix W of part 51 of 40 CFR ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix IX of this chapter, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (incorporated by reference in section 66260.11) to predict the maximum annual average off-site ground level concentration of 2,3,7,8-TCDD equivalents determined under subsection (e)(2) of this section. The maximum annual average concentration shall be used when a person resides on-site; and (4) The ratio of the predicted maximum annual average ground level concentration of 2,3,7,8-TCDD equivalents to the risk-specific dose for 2,3,7,8-TCDD provided in appendix V of this chapter (2.2 X 10-7) shall not exceed 1.0.

(1)

During the trial burn (for new facilities or an interim status facility applying for a

permit) or compliance test (for interim status facilities), determine emission rates of the tetra-octa congeners of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources, found in U.S. EPA Publication SW-846, as incorporated by reference in Section 66260.11 of this Division.

(2)

Estimate the 2,3,7,8-TCDD toxicity equivalence of the tetra-octa CDDs/CDFs congeners using "Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners" in appendix IX of this chapter. Multiply the emission rates of CDD/CDF congeners with a toxicity equivalence greater than zero (see the procedure) by the calculated toxicity equivalence factor to estimate the equivalent emission rate of 2,3,7,8-TCDD;

(3)

Conduct dispersion modeling using methods recommended in appendix W of part 51 of 40 CFR ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix IX of this chapter, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (incorporated by reference in section 66260.11) to predict the maximum annual average off-site ground level concentration of 2,3,7,8-TCDD equivalents determined under subsection (e)(2) of this section. The maximum annual average concentration shall be used when a person resides on-site; and

(4)

The ratio of the predicted maximum annual average ground level concentration of 2,3,7,8-TCDD equivalents to the risk-specific dose for 2,3,7,8-TCDD provided in

appendix V of this chapter (2.2 X 10-7) shall not exceed 1.0.

(f)

Monitoring CO and HC in the by-pass duct of a cement kiln. Cement kilns may comply with the carbon monoxide and hydrocarbon limits provided by subsections (b), (c), and (d) of this section by monitoring in the by-pass duct provided that: (1) Hazardous waste is fired only into the kiln and not at any location downstream from the kiln exit relative to the direction of gas flow; and (2) The by-pass duct diverts a minimum of 10% of kiln off-gas into the duct.

(1)

Hazardous waste is fired only into the kiln and not at any location downstream from the kiln exit relative to the direction of gas flow; and

(2)

The by-pass duct diverts a minimum of 10% of kiln off-gas into the duct.

(g)

Use of emissions test data to demonstrate compliance and establish operating limits. Compliance with the requirements of this section shall be demonstrated simultaneously by emissions testing or during separate runs under identical operating conditions. Further, data to demonstrate compliance with the CO and HC limits of this section or to establish alternative CO or HC limits under this section shall be obtained during the time that DRE testing, and where applicable, CDD/CDF testing under subsection (e) of this section and comprehensive organic emissions testing under subsection (f) is conducted.

(h)

Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 66266.102) will be regarded as compliance with this section. However, evidence that compliance

with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and re-issuance of a permit under section 66270.41 of chapter 20 of this division.