

**WAC 173-303-670 Incinerators.** (1) Applicability.

(a) Except as WAC 173-303-600 provides otherwise, the regulations in this section apply to owners and operators of facilities that incinerate dangerous waste and to owners and operators who burn dangerous waste in boilers or industrial furnaces in order to destroy them, or who burn dangerous waste in boilers or in industrial furnaces for any recycling purpose and elect to be regulated under this section.

(b) *Integration of the MACT standards.* 40 C.F.R. part 63 subpart EEE is incorporated by reference at WAC 173-400-075 (5)(a). Note that if you are subject to Part 63 you must get an air permit from ecology or the local air authority.

(i) Except as provided by (b)(ii) through (iv) of this subsection, the standards of this section do not apply to a new dangerous waste incineration unit that becomes subject to dangerous waste permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing dangerous waste incineration unit demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 C.F.R. part 63, subpart EEE, by conducting a comprehensive performance test and submitting to the department a Notification of Compliance under 40 C.F.R. 63.1207(j) and 63.1210(b) documenting compliance with the requirements of part 63, subpart EEE. Nevertheless, even after this demonstration of compliance with the MACT standards, dangerous waste permit conditions that were based on the standards of this section will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.

(ii) The MACT standards do not replace the closure requirements of WAC 173-303-610 or the applicable requirements of WAC 173-303-280 through 173-303-395, 173-303-645, 173-303-610, 173-303-620, 173-303-691, 173-303-692, and 173-303-902.

(iii) The particulate matter standard of subsection (4)(c)(ii) of this section remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard of 40 C.F.R. 63.1206 (b)(14) and 63.1219(e).

(iv) The following requirements remain in effect for startup, shutdown, and malfunction events if you elect to comply with 40 C.F.R. 270.235 (a)(1)(i), which is incorporated by reference, to minimize emissions of toxic compounds from these events:

(A) Subsection (6)(a) of this section requiring that an incinerator operate in accordance with operating requirements specified in the permit; and

(B) Subsection (6)(c) of this section requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes.

(v) The particulate matter standard of subsection (4) of this section remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard of 40 C.F.R. 63.1206 (b)(14) and 63.1219(e).

(c) The department may, in establishing permit conditions, exempt the facility from all requirements of this section except subsection (2) of this section, waste analysis, and subsection (8) of this section, closure, if the department finds, after an examination of the waste analysis included with Part B of the owner/operator's permit application, that the waste to be burned:

(i)(A) Is either listed as a dangerous waste in WAC 173-303-080 only because it is ignitable or, that the waste is designated only as an ignitable dangerous waste under WAC 173-303-090; or

(B) Is either listed in WAC 173-303-080 or is designated under WAC 173-303-090 solely because it is reactive for the characteristics described in WAC 173-303-090 (7)(a)(i), (ii), (iii), (vi), (vii) and (viii), and will not be burned when other dangerous wastes are present in the combustion zone; and

(ii) Contains none of the dangerous constituents listed in WAC 173-303-9905 above significant concentration limits; and

(iii) Is not designated by the dangerous waste criteria of WAC 173-303-100.

(d) The owner or operator of an incinerator may conduct trial burns, subject only to the requirements of WAC 173-303-807, trial burn permits.

(2) Waste analysis.

(a) As a portion of a trial burn plan required by WAC 173-303-807, or with Part B of his permit application, the owner or operator must have included an analysis of his waste feed sufficient to provide all information required by WAC 173-303-807 or 173-303-806 (3) and (4).

(b) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit (under subsection (6)(b) of this section).

(3) Designation of principal organic dangerous constituents and dangerous combustion by-products. Principal organic dangerous constituents (PODCs) and dangerous combustion by-products must be treated to the extent required by the performance standards specified in subsection (4) of this section. For each waste feed to be burned, one or more PODCs and dangerous combustion by-products will be specified in the facility's permit from among those constituents listed in WAC 173-303-9905 and, to the extent practical, from among those constituents which contribute to the toxicity, persistence, or carcinogenicity of wastes designated under WAC 173-303-100. This specification will be based on the degree of difficulty of incineration of the organic constituents of the waste feed and its combustion by-products and their concentration or mass, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents or by-products which represent the greatest degree of difficulty of incineration will be those most likely to be designated as PODCs and dangerous combustion by-products. Constituents are more likely to be designated as PODCs or dangerous combustion by-products if they are present in large quantities or concentrations. Trial PODCs will be designated for performance of trial burns in accordance with the procedure specified in WAC 173-303-807 for obtaining trial burn permits. Trial dangerous combustion by-products may be designated under the same procedures.

(4) Performance standards. An incinerator burning dangerous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under subsection (6) of this section, it will meet the following performance standards:

(a)(i) Except as provided in (a)(ii) of this subsection, an incinerator burning dangerous waste must achieve a destruction and removal efficiency (DRE) of 99.99 percent for each PODC designated (under subsection (3) of this section) in its permit for each waste feed. DRE is determined for each PODC from the following equation:

$$DRE = \frac{(W_{in} - W_{out}) \times 100\%}{W_{in}}$$

Where:

$W_{in}$  = Mass feed rate of one PODC in the waste stream feeding the incinerator, and

$W_{out}$  = Mass emission rate of the same PODC present in exhaust emissions prior to release to the atmosphere.

(ii) An incinerator burning dangerous wastes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic dangerous constituent (PODCs) designated (under subsection (3) of this section) in its permit. This performance must be demonstrated on PODCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each PODCs from the equation in subsection (4)(a)(i) of this section. In addition, the owner or operator of the incinerator must notify the department of his intent to incinerate dangerous wastes F020, F021, F022, F023, F026, or F027.

(b) Incinerators burning dangerous waste must destroy dangerous combustion by-products designated under subsection (3) of this section so that the total mass emission rate of these by-products emitted from the stack is no more than .01 percent of the total mass feed rate of PODCs fed into the incinerator.

(c)(i) An incinerator burning dangerous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or one percent of the HCl in the stack gas prior to entering any pollution control equipment.

(ii) An incinerator burning dangerous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = \frac{P_m \times 14}{21 - Y}$$

Where  $P_c$  is the corrected concentration of particulate matter,  $P_m$  is the measured concentration of particulate matter, and  $Y$  is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas, presented in 40 C.F.R. Part 60, Appendix A (Method 3). This correction procedure is to be used by all dangerous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the department will select an appropriate correction procedure to be specified in the facility permit.

(d) The emission standards specified in (c) of this subsection must be met when no other more stringent standards exist. Where a state or local air pollution control authority has jurisdiction and has more stringent emission standards, an incinerator burning dangerous wastes must comply with the applicable air pollution control authority's emission standards (including limits based on best available control technology).

(e) For purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subsection (6) of

this section), will be regarded as compliance with subsection (4) of this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of subsection (4) of this section, may be evidence justifying modification, revocation, or reissuance of a permit under WAC 173-303-830.

(5) Trial burns and permit modifications.

(a) The owner or operator of a dangerous waste incinerator may burn only wastes specified in his permit and only under operating conditions specified for those wastes under subsection (6) of this section, except:

(i) In approved trial burns under WAC 173-303-807; or

(ii) Under exemptions created by WAC 173-303-670(1).

(b) New dangerous wastes may be burned only after operating conditions have been specified in a trial burn permit or a permit modification has been issued, as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with Part B of a permit application under WAC 173-303-806(4).

(c) The permit for a new dangerous waste incinerator must establish appropriate conditions for each of the applicable requirements of this section, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of subsection (6) of this section, sufficient to comply with the following standards:

(i) For the period beginning with initial introduction of dangerous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in (c)(ii) of this subsection, not to exceed a duration of seven hundred twenty hours operating time for treatment of dangerous waste. The operating requirements must be those most likely to ensure compliance with the performance standards of subsection (4) of this section, based on the department's engineering judgment. The department may extend the duration of this period once for up to seven hundred twenty additional hours when good cause for the extension is demonstrated by the applicant;

(ii) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of subsection (4) of this section, and must be in accordance with the approved trial burn plan;

(iii) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the department, the operating requirements must be those most likely to ensure compliance with the performance standards of subsection (4) of this section, based on the department's engineering judgment;

(iv) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in WAC 173-303-806 (4)(f)(iii)(G), as sufficient to ensure compliance with the performance standards of subsection (4) of this section.

(6) Operating requirements.

(a) An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in subsection (5)(b) of this section and in-

cluded with Part B of a facility's permit application) to be sufficient to comply with the performance standards of subsection (4) of this section.

(b) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of subsection (4) of this section) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:

- (i) Carbon monoxide (CO) level in the stack exhaust gas;
- (ii) Waste feed rate;
- (iii) Combustion temperature;
- (iv) An appropriate indicator of combustion gas velocity;
- (v) Allowable variations in incinerator system design or operating procedures; and
- (vi) Such other operating requirements as are necessary to ensure that the performance standards of subsection (4) of this section are met.

(c) During startup and shutdown of an incinerator, dangerous waste (except waste exempted in accordance with subsection (1)(b) of this section) must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.

(d) Fugitive emissions from the combustion zone must be controlled by:

- (i) Keeping the combustion zone totally sealed against fugitive emissions;
- (ii) Maintaining a combustion zone pressure lower than atmospheric pressure; or
- (iii) An alternate means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(e) An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under (a) of this subsection.

(f) An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

(7) Monitoring and inspections.

(a) The owner or operator must conduct, as a minimum, the following monitoring while incinerating dangerous waste:

- (i) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis;
- (ii) Carbon monoxide (CO) must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere; and
- (iii) As required by the department, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of subsection (4) of this section.

(b) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be completely inspected at least daily for leaks, spills, fugitive emissions, and signs of tampering. All emer-

gency waste feed cutoff controls and system alarms must be tested at least weekly to verify proper operation, unless the owner or operator demonstrates to the department that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, emergency cutoff and alarm systems must be tested at least monthly.

(c) This monitoring and inspection data must be recorded and the records must be placed in the operating log required by WAC 173-303-380(1).

(8) Closure. At closure the owner or operator must remove all dangerous waste and dangerous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site. Remaining equipment, bases, liners, soil, and debris containing or contaminated with dangerous waste or waste residues must be decontaminated or removed.

[Statutory Authority: Chapters 70.105 and 70.105D RCW. WSR 09-14-105 (Order 07-12), § 173-303-670, filed 6/30/09, effective 7/31/09. Statutory Authority: Chapters 70.105, 70.105D, and 15.54 RCW and RCW 70.105.007. WSR 04-24-065 (Order 03-10), § 173-303-670, filed 11/30/04, effective 1/1/05. Statutory Authority: Chapters 70.105 and 70.105D RCW. WSR 95-22-008 (Order 94-30), § 173-303-670, filed 10/19/95, effective 11/19/95; WSR 94-01-060 (Order 92-33), § 173-303-670, filed 12/8/93, effective 1/8/94. Statutory Authority: Chapter 70.105 RCW. WSR 86-12-057 (Order DE-85-10), § 173-303-670, filed 6/3/86; WSR 84-09-088 (Order DE 83-36), § 173-303-670, filed 4/18/84. Statutory Authority: Chapter 70.105 RCW and RCW 70.95.260. WSR 82-05-023 (Order DE 81-33), § 173-303-670, filed 2/10/82.]