

## **APPENDIX 129D**

### **COMMERCIAL & INDUSTRIAL SOLID WASTE INCINERATION (All Units)**

#### **NEW SOURCE PERFORMANCE STANDARDS (40 CFR 60 Subpart CCCC)**

#### **EXISTING SOURCE EMISSION GUIDELINES (40 CFR 60 Subpart DDDD)**

#### **CAA SECTION 129 SOLID WASTE COMBUSTION STANDARDS**



## REGULATION STATUS

EPA issued New Source Performance Standards (NSPS) and Existing Source Emission Guidelines (EG) for commercial and industrial solid waste incineration (CISWI) units on 1 Dec 00 ([65 FR 75337](#)). Sections [129\(a\)](#)(1)(D) and [129\(b\)](#) of the 1990 Clean Air Act amendments required EPA to establish emission standards for existing and new CISWI units.

An EPA Fact Sheet and other information on these rules are posted on the Internet at <http://www.epa.gov/ttn/uatw/129/ciwi/ciwipg.html>.

## RULE SUMMARIES

### Applicability

Use **Table 1** and the following exemptions and definitions to determine if a CISWI unit would be affected by one of these subparts.

**Table 1. Applicability of CISWI Regulations**

Date of Commencement of...	Unit Capacity [(tpd)]	Applicable Regulation in 40 CFR 60
<b>...Construction</b>		
≤ 1 Nov 99	All	Subpart DDDD
> 1 Nov 99	All	Subpart CCCC
<b>...Reconstruction/Modification<sup>a</sup></b>		
< 1 Jun 00	All	Subpart DDDD
≥ 1 Jun 00	All	Subpart CCCC

a. Subpart CCCC does not apply if physical or operational changes are made to comply with Subpart DDDD.

### *New Source Performance Standards (NSPS) 40 CFR 60 Subpart CCCC*

The NSPS applies if your [CISWI unit](#) commenced construction after 1 Nov 99 or commenced reconstruction or modification on or after 1 Jun 01. The following units are exempt from all or most requirements.

The following units are partially exempt.

*Air curtain incinerators* that burn only the materials listed below are only required to meet the requirements for "Air Curtain Incinerators" in §§60.2245 through 60.2260.

- (1) 100 percent wood waste; or
- (2) 100 percent clean lumber; or
- (3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

The following units are exempt from all or most requirements. Some units are subject to notification and recordkeeping requirements.

*Pathological waste incineration units* that burn 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in §60.2265. Owners of units that qualify for this exemption must:

- (1) Notify the Administrator that the unit meets these criteria.
- (2) Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

*Agricultural waste incineration units* that burn 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of agricultural wastes as defined in §60.2265. Owners of units that qualify for this exemption must:

- (1) Notify the Administrator that the unit meets these criteria.
- (2) Keep records on a calendar quarter basis of the weight of agricultural waste burned, and the weight of all other fuels and wastes burned in the unit.

*Municipal waste combustion units* that:

- (1) Are regulated under 40 CFR 60 subpart Ea (Standards of Performance for Municipal Waste Combustors); 40 CFR 60 subpart Eb (Standards of Performance for Municipal Waste Combustors for which construction is commenced after September 20, 1994); 40 CFR 60 subpart AAAA (Standards of Performance for New Stationary Sources: Small Municipal Waste Combustion Units); or 40 CFR 60 subpart BBBB (Emission Guidelines for Existing Stationary Sources: Small Municipal Waste Combustion Units); or
- (2) Burn greater than 30 percent municipal solid waste or refuse-derived fuel, as defined in 40 CFR 60 subparts Ea, Eb, AAAA, and BBBB, and that have the capacity to burn less than 35 tons (32 megagrams) per day of municipal solid waste or refuse-derived fuel. Owners of units that qualify for this exemption must:
  - (i) Notify the Administrator that the unit meets these criteria.
  - (ii) Keep records on a calendar quarter basis of the weight of municipal solid waste burned, and the weight of all other fuels and wastes burned in the unit.

COMMERCIAL & INDUSTRIAL SOLID WASTE INCINERATION RULES
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*Medical waste incineration units* regulated under 40 CFR 60 subpart Ec (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for which construction is commenced after June 20, 1996).

*Small power production facility units* that meet the following three requirements.

- (1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)); and
- (2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity; and
- (3) The owner notifies the Administrator that the unit meets all of these criteria.

*Cogeneration facility units* that meet the following three requirements.

- (1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)); and
- (2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes; and
- (3) The owner notifies the Administrator that the unit meets all of these criteria.

*Hazardous waste combustion units* that either:

- (1) Are required to get a permit under section 3005 of the Solid Waste Disposal Act; or
- (2) Units regulated under 40 CFR 63 subpart EEE (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors).

*Materials recovery units* that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters.

*Cyclonic barrel burners.*

*Rack, part, and drum reclamation units.*

*Cement kilns.*

*Sewage sludge incineration units* regulated under 40 CFR 60 subpart O (Standards of Performance for Sewage Treatment Plants).

*Chemical recovery units* burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. The following seven types of units are considered chemical recovery units.

- (1) Units burning only pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.
- (2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.
- (3) Units burning only wood or coal feedstock for the production of charcoal.

COMMERCIAL & INDUSTRIAL SOLID WASTE INCINERATION RULES
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- (4) Units burning only manufacturing byproduct streams/residues containing catalyst metals which are reclaimed and reused as catalysts or used to produce commercial grade catalysts.
- (5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.
- (6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or other gases for use in other manufacturing processes.
- (7) Units burning only photographic film to recover silver.

*Laboratory analysis units* that burn samples of materials for the purpose of chemical or physical analysis.

*Existing Source Emission Guidelines (EG) 40 CFR 60 Subpart DDDD*

The EG will eventually affect your existing [CISWI unit](#) if it commenced construction on or before 30 Nov 99, or commenced reconstruction or modification before 1 Jun 01, except that the following units are exempt from most or all requirements.

The following units are partially exempt:

*Air curtain incineration units* that combust 100% wood waste and clean lumber are exempt from all emission limits **except** opacity.

The following units are exempt from all or most requirements. Some units are subject to notification and recordkeeping requirements.

*Units* identified as exempt from the NSPS (see above).

Municipal waste combustion units that are regulated under 40 CFR 60 subpart Cb (EG for large MWCs), or subpart BBBB (EG for small MWCs).

*Hospital/medical/infectious waste incineration units* regulated under 40 CFR 60 subpart Ce (EG for certain units).

**Key Definitions (same in both the NSPS and EG)**

*Commercial and industrial solid waste incineration (CISWI) unit* means any combustion device that combusts commercial and industrial waste, as defined in this subpart. The boundaries of a CISWI unit are defined as, but not limited to, the commercial or industrial solid waste fuel feed system, grate system, flue gas system, and bottom ash. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the commercial and industrial solid waste hopper (if applicable) and extends through two areas:

- (1) The combustion unit flue gas system, which ends immediately after the last combustion chamber.

COMMERCIAL & INDUSTRIAL SOLID WASTE INCINERATION RULES
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- (2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

*Commercial and industrial waste* means solid waste combusted in an enclosed device using controlled flame combustion without energy recovery that is a distinct operating unit of any commercial or industrial facility (including field-erected, modular, and custom built incineration units operating with starved or excess air), or solid waste combusted in an air curtain incinerator without energy recovery that is a distinct operating unit of any commercial or industrial facility.

*Drum reclamation unit* means a unit that burns residues out of drums (e.g., 55 gallon drums) so that the drums can be reused.

*Rack reclamation unit* means a unit that burns the coatings off racks used to hold small items for application of a coating. The unit burns the coating overspray off the rack so the rack can be reused.

*Solid waste* means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (26 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923). For purposes of this subpart and 40 CFR part 60, subpart DDDD, only, solid waste does not include the waste burned in the fifteen types of units described in §60.2020.

## Emission Limits

The rule and guidelines will affect new and existing CISWI units regardless of size. The following table shows the emission limits.

**Table 2: Emission Limits for New and Existing CISWI Units**

Pollutant	Emission Limits <sup>a</sup>	
	Subpart CCCC NSPS New Units	Subpart DDDD EG Existing Units
Cadmium (Cd)	0.004 mg/dscm	
Carbon Monoxide (CO)	157 ppm by dry volume	
Dioxins/Furans	0.41 ng/dscm (total mass basis)	
Hydrogen Chloride (HCl)	62 ppm by dry volume	
Lead (Pb)	0.04 mg/dscm	
Mercury (Hg)	0.47 mg/dscm	
Opacity	10 percent	
Oxides of Nitrogen (NOx)	388 ppm by dry volume	
Particulate Matter (PM)	70 mg/dscm	
Sulfur Dioxide (SO2)	20 ppm by dry volume	
Notes: <sup>a</sup> All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.		

## Other Requirements

Owners of CISWI units must do the following:

### *Siting Analysis (new units only):*

- Submit a report that evaluates site-specific air pollution control alternatives that minimize potential risks to public health or the environment, considering costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.

### *Waste Management Plan:*

- Submit a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream to reduce or eliminate toxic emissions from incinerated waste.



*Operator Training and Qualification Requirements:*

- Qualify operators or their supervisors (at least one per facility) by ensuring that they complete an operator training course and annual review or refresher course.

*Testing Requirements:*

- Conduct initial performance tests for cadmium, carbon monoxide, dioxins/furans, hydrogen chloride, lead, mercury, nitrogen oxides, opacity, particulate matter, and sulfur dioxide and establish operating limits (i.e., maximum or minimum values for operating parameters).
- Conduct annual performance tests for particulate matter and hydrogen chloride emissions and opacity. (An owner or operator may conduct less frequent testing if the facility demonstrates that it is in compliance with the emission limitations for 3 consecutive years.)

*Monitoring Requirements:*

- If using a wet scrubber to comply with the emission limitations, continuously monitor the following operating parameters: charge rate, pressure drop across the wet scrubber (or amperage), and scrubber liquid flow rate and pH.
- If something other than a wet scrubber is used to comply with the emission limitations, monitor other operating parameters, as approved by the EPA.
- If using a fabric filter to comply with the emission limitations, in addition to monitoring other operating parameters as approved by the Administrator, you must install and operate a bag leak detection system with an alarm.

*Recordkeeping and Reporting Requirements:*

- Maintain for 5 years records of the initial performance tests and all subsequent performance tests, operating parameters, any maintenance, the siting analysis (for new units only), and operator training and qualification.
- Submit the results of the initial performance tests and all subsequent performance tests and values for the operating parameters.

**Compliance Deadlines**

*Subpart CCCC (NSPS)*

Units subject to the NSPS must be in compliance 60 days after the CISWI unit reaches the charge rate at which it will operate, **and** no later than 180 days after its initial startup.

*Subpart DDDD (EG)*

Unlike NSPS, the guidelines are not enforceable until EPA approves a State rule that implements the guidelines or adopts a Federal implementation plan. States are required to submit a State rule to EPA no later than 1 Dec 01. Once the rule is approved by EPA (which may take another year), affected sources must comply

within three years or earlier if required by the State rule. In most cases, the compliance deadline for existing sources will be in 2005.

## **MILITARY SOURCES**

The HAP Subcommittee is of the opinion that classified waste incinerators would qualify for the municipal waste combustor exemption. However, we encourage owners of such units to review the rule to make sure they concur. [Very small MWC](#) units that escape regulation under CISWI will be covered by a future rule that will regulate all MWC units with a capacity of less than 35 tons per day. Classified waste is probably better characterized as municipal waste rather than commercial or industrial waste.

The rules also potentially affect various non-hazardous waste decontamination incinerators and furnaces used on military ranges and ordnance/explosives manufacturing facilities. There is a specific exemption for Material Recovery Units that will likely apply to furnaces where the primary purpose is to recover metal. Units that do not primarily recover metal, but primarily consume combustibles (e.g. crates and shipping containers) are not likely to be covered by any other air regulations and will likely remain subject to the final CISWI rules.

The HAP Subcommittee is not aware of any other potentially affected military units.

## **CONTACTS**

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