

40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional ***Boilers and Process Heaters; Final Rule***

Effective Date: November 12, 2004

Promulgated: September 13, 2004

Signed: February 26, 2004

Proposed: January 13, 2003

What Source Categories and Subcategories Are Affected by the Proposed Rule?

The final rule affects industrial boilers, institutional and commercial boilers, and process heaters.

In the final rule **boiler** means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Waste heat boilers are excluded from this definition. A **waste heat boiler** (or heat recovery steam generator) is a device that recovers normally unused energy and converts it to usable heat. Waste heat boilers incorporating duct or supplemental burners that are designed to supply 50% or more of the total rated heat input capacity of the waste heat boiler are not considered 'waste heat boilers,' but are considered "boilers" under this rule.



Process heaters are defined as an enclosed device using controlled flame, that is not a boiler, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not directly come into contact with process materials (e.g., indirect fired). Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves.

What Is the Affected Source?

The affected source is

- the collection of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory located at a major source of HAPs, or
- each individual new or reconstructed industrial, commercial, or institutional boiler or process heater located at a major facility.

A boiler or process heater is **new** if construction commenced after January 13, 2003, and it met the applicability criteria at the time construction was commenced.

A boiler or process heater is **reconstructed** if it meets the reconstruction criteria of 40CFR63.2; commenced reconstruction after January 13, 2003; and met the applicability criteria at the time reconstruction was commenced.

The affected source does **not** include units that are

- municipal waste combustors (40 CFR part 60, subparts AAAA, BBBB, or Cb),
- hospital/medical/infectious waste incinerators (40 CFR part 60, subpart Ce and Ec),
- fossil fuel- fired electric utility steam generating units greater than 25 megawatts that serves a generator that produces electricity for sale,
 - An **electric utility steam generating unit** means a fossil fuel-fired combustion unit of more than 25 MW that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity, and supplies more than one-third of its potential electric output capacity, and more than 25 MW electrical output to any utility power distribution is considered to be an electric utility steam generating unit.
- boilers or process heaters required to have a permit under section 3005 of the Solid Waste Disposal Act or are subject to 40 CFR part 63, subpart EEE, (hazardous waste boilers),
- commercial and industrial solid waste incineration units (40 CFR part 60, subparts CCCC or DDDD),
- recovery boilers or furnaces (40 CFR part 63, subpart MM),
- boilers or process heaters used specifically for research and development
 - This does not include units that only provide heat or steam to a process at a research and development facility
- hot water heaters as defined by this subpart,
 - A **hot water heater** is a closed vessel with a capacity of no more than 120 US gallons in which water is heated by combustion of gaseous or liquid fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 pounds per square inch gauge (psig), including the apparatus by which the heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210 degree Fahrenheit (99 degree Celsius).
- refining kettles (40 CFR 63, Subpart X),
- ethylene cracking furnaces (40 CRF part 63, subpart YY),
- blast furnace stoves as described in the EPA document, "National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Plants - Background Information for Proposed Standards," (EPA-453/R-01-005),
- any boiler or process heater specifically listed as an affected source in another standard(s) under 40CFR63,
- any boiler or process heater specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act (CAA),
- temporary boilers as defined by this subpart,
 - A **temporary boiler** is any gaseous or liquid fuel boiler that is designed to, and is capable of being carried or moved from one location to another. A temporary boiler that remains at a location for more than 180 consecutive days is no longer considered to be a temporary boiler. Any temporary boiler that replaces a temporary boiler at a location and is intended to perform the same or similar function will be included in calculating the consecutive time period.
- blast furnace gas fuel-fired boilers and process heaters as defined by this subpart.

Does the Final Rule Apply to Me?

The final rule applies to you if you own or operate a boiler or process heater at a major source meeting the requirements discussed in the rule (and listed briefly in this factsheet).

A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit (including fugitive emissions) any single HAP at a rate of 10 tons or more per year or any combination of HAPs at a rate of 25 tons or more a year.

Category Definitions

Large units are those watertube boilers and process heaters with heat input capacities greater than 10 million British thermal units per hour (MMBtu/hr).

Small units are any firetube boilers or any boiler and process heater with heat input capacities less than or equal to 10 MMBtu/hr.

Limited use units are those large units with capacity utilizations less than or equal to 10 percent as required in a federally enforceable permit.

Subcategory Definitions

- If your new or existing boiler or process heater is permitted to burn a solid fuel (either as a primary fuel or a backup fuel), or any combination of solid fuel with liquid or gaseous fuel, the unit is in one of the **solid subcategories**.
- If your new or existing boiler or process heater burns a liquid fuel, or a liquid fuel in combination with a gaseous fuel, the unit is in one of the **liquid subcategories**, except if the unit burns liquid only during periods of gas curtailment.
- If your new or existing boiler or process heater burns a gaseous fuel only (not combined with any liquid or solid fuels), or burns liquid fuel only during periods of gas curtailment or gas supply emergencies, the unit is in the **gaseous subcategory**.

40CFR63, SUBPART DDDDD, Table 1 in preamble to final rule

EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR BOILERS AND PROCESS HEATERS							
(pounds per million British thermal units (lb/MMBtu))							
Source	Subcategory	Particulate Matter (PM)	or	Total Selected Metals	Hydrogen Chloride (HCl)	Mercury (Hg)	Carbon Monoxide (CO) (ppm)
New Boiler or Process Heater	Solid Fuel, Large Unit	0.025	or	0.0003	0.02	0.000003	400 (@7% oxygen)
	Solid Fuel, Small Unit	0.025	or	0.0003	0.02	0.000003	----
	Solid Fuel, Limited Use	0.025	or	0.0003	0.02	0.000003	400 (@7% oxygen)
	Liquid Fuel, Large Unit	0.03		----	0.0005	----	400 (@3% oxygen)
	Liquid Fuel, Small Unit	0.03		----	0.0009	----	----
	Liquid Fuel, Limited Use	0.03		----	0.0009	----	400 (@3% oxygen)
	Gaseous Fuel, Large Unit	----		----	----	----	400 (@3% oxygen)
	Gaseous Fuel, Small Unit	----		----	----	----	----
	Gaseous Fuel, Limited Use	----		----	----	----	400 (@3% oxygen)
Existing Boiler or Process Heater	Solid Fuel, Large Unit	0.07	or	0.001	0.09	0.000009	----
	Solid Fuel, Small Unit	----		----	----	----	----
	Solid Fuel, Limited Use	0.21	or	0.004	----	----	----
	Liquid Fuel, Large Unit	----		----	----	----	----
	Liquid Fuel, Small Unit	----		----	----	----	----
	Liquid Fuel, Limited Use	----		----	----	----	----
	Gaseous Fuel	----		----	----	----	----

Boilers/Process Heaters with Limited MACT Requirements

NOT SUBJECT TO ANY REQUIREMENTS OF THE FINAL RULE (40CFR63, SUBPART DDDDD), OR SUBPART A [§63.7506(c)]

New Boiler or Process Heater

- Gaseous Fuel, Small Unit

Existing Boiler or Process Heater

- Solid Fuel, Small Unit
- Liquid Fuel, Small Unit
- Gaseous Fuel, Small Unit

**ONLY INITIAL NOTIFICATION PER 40CFR63.9(b) MUST BE SUBMITTED
& NO SSM PLAN REQUIRED [§63.7506(b)]**

New Boiler or Process Heater

- Liquid Fuel, Small Unit - that only burns gaseous fuels or distillate oil
“Distillate oil” means fuel oils, including recycled oils, that comply with the specifications for fuel oil numbers 1 and 2, as defined in ASTM D396-02a.

Existing Boiler or Process Heater

- Liquid Fuel, Large Unit
- Liquid Fuel, Limited Use
- Gaseous Fuel, Large Unit
- Gaseous Fuel, Limited Use

**ALL OTHER BOILERS AND PROCESS HEATERS MUST SUBMIT
NOTIFICATIONS & PERFORM RECORDKEEPING, REPORTING, AND TESTING
PER 40CFR63, SUBPART DDDDD**