

## White Paper: Air Toxics Standards for Boilers at Area Source Facilities

July 8, 2010

### Introduction

On April 29, 2010 EPA issued a proposed rule designed to reduce toxic air pollutants (also called hazardous air pollutants or HAPs) from existing and new industrial, commercial, and institutional boilers located at area source facilities. This new rule applies to area sources of toxic air pollutants which are facilities with the potential to emit less than 10 tons per year (tpy) of any single HAP or less than 25 tpy total for all HAPs aggregated.

### Applicability

EPA is proposing to regulate boilers based on the type of fuel burned. The rule applies to existing and new industrial, commercial, and institutional boilers at area sources that burn coal, oil, or biomass, or non-waste materials, but does not apply to units that burn solid waste. Units that burn solid waste are regulated under the new Commercial Industrial Solid Waste Incinerator (CISWI) rules. A revised definition of what constitutes solid waste was published in the Federal Register on January 2, 2009. This definition will be used to determine whether a unit is regulated as a boiler or an incinerator.

### Proposed Requirements

Emission standards are proposed for mercury, PM (as a surrogate for non-mercury metals), and CO (as a surrogate for organic air toxics). The following tables summarize the sources and the pollutants that will be regulated, and other proposed requirements:

**Table 1 – Fuels Combusted and Pollutants Regulated**

Unit	Fuel	Pollutant		
		Mercury	PM	CO
New Boilers	Coal	Yes	Yes	Yes
	Biomass and Oil	No	Yes	Yes
Existing Boilers	Coal	Yes	No	Yes
	Biomass and Oil	No	No	Yes

**Table 2 – Proposed Requirements**

Unit	Additional Requirements
Large Boilers (10 MMBtu/hr or greater)	Conduct Energy Assessment
Small Boilers (Less than 10MMBtu/hr)	<ul style="list-style-type: none"> <li>• No emission limits</li> <li>• Tune up required every 2 years</li> </ul>
Natural Gas Fired Boilers	Not regulated under this proposed rule

### Emission Limits for Area Source Boilers

The following emission limits are proposed for new and existing boilers at area source facilities.

**Table 3 – Emission Limits**

Source	Subcategory	Particulate Matter (PM)** lb/MMBtu	Mercury lb/MMBtu	Carbon Monoxide (CO) ppm
New Boilers	Coal	0.03	3.0E-06	310 @ 7% O <sub>2</sub>
	Biomass	0.03	--	100 @ 7% O <sub>2</sub>
	Oil	0.03	--	1 @ 3% O <sub>2</sub>
Existing Boilers*	Coal	--	3.0E-06	310 @ 7% O <sub>2</sub>
	Biomass	--	--	160 @ 7% O <sub>2</sub>
	Oil	--	--	2 @ 3% O <sub>2</sub>

\*Only for existing boilers with heat input of 10 MMBtu/hr and greater

\*\* PM limit applies only to filterable particulate

### **Startup, Shutdown, and Malfunction Requirements**

The United States Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in EPA's Clean Air Act (CAA) section 112 regulations commonly referred to as the "General Provisions Rule". These two provisions exempt sources from the requirement to comply with the otherwise applicable CAA section 112 (d) emission standard during periods of startup, shutdown, and malfunction. In establishing the standards in this rule, EPA has taken into account startup and shutdown periods and has not established different standards for those periods. The standards being proposed are daily or monthly averages. Over long averaging periods, EPA believes startups and shutdowns will not affect the achievability of the standard. EPA is also not factoring malfunctions into the development of this standard and does not view malfunctions as a distinct operating mode. EPA also believes that the standard should not be based on these periods which do not fit the concept of "best performing" sources in defining MACT.

### **Compliance Requirements**

#### **Initial**

New and existing area source boilers with applicable emission limits will be required to conduct initial stack tests or fuel analysis (for mercury) to determine compliance with the PM, mercury, and CO emission limits. Existing area source boilers with a heat input capacity less than 10 MMBtu/hr, will be required to document that a tune up was conducted.

#### **Energy Assessment**

For existing area source boilers with a heat input capacity of 10 MMBtu/hr or greater and subject to the rule, an energy assessment must be performed. The energy assessment must include a review of boiler operations as well as facility energy demands and must be conducted by qualified personnel. Documentation that the energy assessment was conducted and identification of cost-effective energy conservation measures may need to be submitted to EPA. Cost-effective is defined by EPA as having a simple payback of 2 years or less.

#### **Continuous Compliance**

If initial compliance was demonstrated by stack testing, annual stack testing and monitoring requirements for PM and mercury are being proposed. In addition the facility will be required to maintain monthly fuel records. If initial compliance with mercury was demonstrated by fuel analysis, a monthly fuel analysis will be required. For boilers with a heat input capacity equal to or greater than 100 MMBtu/hr, continuous monitoring of CO will be required.

#### **Notification, Recordkeeping, and Reporting Requirements**

The proposed rule requires a notification of compliance status report, semi-annual compliance reports (if a deviation or process change occurred), and other records to demonstrate compliance (which includes but is not limited to CEM data, fuel use, performance tests, etc).

#### **Summary**

This rule will apply to all area source facilities with new or existing boilers that burn coal, oil, or biomass, or non-waste materials, but not units that burn solid waste. Natural gas fired boilers are also not regulated by this rule. Limits for mercury, PM, and CO are being proposed and are dependent on if the unit is new or existing, and the type of fuel combusted. If the boiler has a heat input of 10 MMBtu/hr or greater, the facility will be required to perform an energy assessment. If the boiler has a heat input of less than 10 MMBtu/hr, there will be no emission limits, but instead will be required to meet a work practice standard by performing a boiler tune-up every 2 years.

Rule summary by Joe Losee; [jlosee@sebsta.com](mailto:jlosee@sebsta.com) or (319) 364-1005.

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