

# Industrial, Commercial and Institutional Boilers at Area Source Facilities (Boiler GACT) Rule Requirements Summary

## Federal Regulation

- NESHAP 40CFR63 Subpart JJJJJJ
- Proposed rule published June 4, 2010
- Final rule signed February 21, 2011
- Info at <http://epa.gov/airquality/combustion/actions.html>

## Applicability

### **Affected Sources:**

The affected source is the collection of all existing industrial, commercial, and institutional boilers within a subcategory (coal, biomass, oil) located at an area source.

- Existing Source: Industrial, commercial or institutional boilers for which construction or reconstruction began on or before June 4, 2010.
- New Source: Industrial, commercial or institutional boilers for which construction or reconstruction began after June 4, 2010.
- New Affected Source: Industrial, commercial or institutional boilers for which fuel switching from natural gas to coal, biomass, or oil commenced after June 4, 2010.
- Synthetic area sources are not required to obtain a Title V permit.

### **Exempted Sources:**

Subpart does not apply to the following.

- Any boiler specifically listed as an affected source in another standard under 40 CFR 63.
- Any boiler specifically listed as an affected source in another standard established under section 129 of the Clean Air Act.
- Any boiler required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by 40 CFR 63 Subpart EEE.
- Any boiler used specifically for research and development. Does not include boilers that only provide steam to a process or for heating at a research and development facility.
- Any gas-fired boiler.
- Hot water heaters  $\leq 120$  gal,  $\leq 160$  psig,  $\leq 210$  deg F.
- Any boiler used as a control device to comply with another Part 63 standard provided at least 50 percent of the heat input to the boiler is provided by the gas stream regulated under that subpart.

### **Subcategories:**

- If your boiler burns any solid fossil fuel and no more than 15 percent biomass on a total fuel annual heat input basis, the boiler is in the coal subcategory.
- If your boiler burns at least 15 percent biomass on a total fuel annual heat input basis, the unit is in the biomass subcategory.
- If your boiler burns any liquid fuel and is not in either the coal or the biomass subcategory, the unit is in the oil subcategory, except if the unit burns oil only during periods of gas curtailment.

## Standards

### Work Practice Requirements:

Source	Subcategory	Requirement
Existing or New Source (units with heat input capacity of 10 MMBtu per hour or greater)	Coal	Minimize the boiler's time spent during startup and shutdown following the manufacturer's recommended procedures.
Existing or New Source (units with heat input capacity of less than 10 MMBtu per hour)	Coal, Biomass, or Oil	Conduct a tune-up of the boiler biennially as specified in §63.11222.

### Emission Limits:

Source	Subcategory	Particulate Matter (PM)	Mercury	Carbon Monoxide (CO)
New Source	Coal (>30 MMBtu/hr) <sup>1</sup>	0.03 lb per MMBtu of heat input	4.8E-6 lb per MMBtu of heat input	400 ppm by volume on a dry basis corrected to 7% oxygen (daily average)
	Coal (10 - 30 MMBtu/hr) <sup>1</sup>	0.42 lb per MMBtu of heat input	4.8E-6 lb per MMBtu of heat input	400 ppm by volume on a dry basis corrected to 7% oxygen (daily average)
	Biomass (>30 MMBtu/hr) <sup>2</sup>	0.03 lb per MMBtu of heat input	NA	NA
	Biomass(10-30 MMBtu/hr) <sup>2</sup>	0.07 lb per MMBtu of heat input	NA	NA
	Oil <sup>3</sup>	0.03 lb per MMBtu of heat input	NA	NA
Existing Source with heat input capacity of 10 MMBtu per hour or greater	Coal <sup>1</sup>	NA	4.8E-6 lb per MMBtu of heat input	400 ppm by volume on a dry basis corrected to 7% oxygen (daily average)

The emission limits for PM apply only to new boilers. The emission limits for mercury and CO apply only to boilers in the coal subcategory; the emission limits for existing area source boilers in the coal subcategory are applicable only to area source boilers that have a designed heat input capacity of 10 MMBtu/hr or greater.

A beyond the floor requirement is also included for all existing area source facilities having an affected boiler >10 MMBtu/hr that would require the performance of a one-time energy assessment by qualified personnel on the affected boilers and energy use system to identify any cost-effective energy conservation measures (cost effective means items having a payback period of 2 years or less).

Energy assessment means an in-depth assessment of a facility to identify immediate and long-term opportunities to save energy, focusing on the steam and process heating systems, which involves a thorough examination of potential savings from energy efficiency improvements, waste minimization and pollution prevention, and productivity improvement.

- Energy assessment for facilities with affected boilers using less than 0.3 trillion Btu per year heat input will be one day in length maximum. The boiler system and energy use system accounting for at least 50 percent of the energy output will be evaluated to identify energy savings opportunities, within the limit of performing a one-day energy assessment.

- The Energy assessment for facilities with affected boilers using 0.3 to 1.0 trillion Btu per year will be 3 days in length maximum. The boiler system and any energy use system accounting for at least 33 percent of the energy output will be evaluated to identify energy savings opportunities, within the limit of performing a 3-day energy assessment.
- In the Energy assessment for facilities with affected boilers using greater than 1.0 trillion Btu per year, the boiler system and any energy use system accounting for at least 20 percent of the energy output will be evaluated to identify energy savings opportunities.

An energy assessment completed on or after January 1, 2008 that meets the requirements in the rule can satisfy the requirement.

**Initial Compliance Requirements**

Source	Subcategory	Boiler Heat Input Capacity	Emission Limit or Work Practice	Initial Compliance Demonstration		
				Compliance Dates	Compliance Demonstration Options	Subsequent Performance Testing
New Source	Coal, Biomass, or Oil	Any	PM Emission Limit	No later than 180 calendar days after date of publication of the final rule in the Federal Register or within 180 days after startup of the source	Stack Test per §63.11212 and Table 4 to Subpart JJJJJJ of Part 63	Every three years
New Source	Coal	Any	Mercury Emission Limit	No later than 180 calendar days after date of publication of the final rule in the Federal Register or within 180 days after startup of the source	Stack Test per §63.11212 and Table 4 to Subpart JJJJJJ of Part 63 or Fuel Analysis per §63.11211(b)(1-3), §63.11213 and Table 5 to Subpart JJJJJJ of Part 63	Stack Test: Every three years  Fuel Analysis: Monthly (if complying using fuel analysis) and before burning a new type of fuel or mixture.
New Source	Coal, Biomass, or Oil	Any	CO Emission Limit	No later than 180 calendar days after date of publication of the final rule in the Federal Register or within 180 days after startup of the source	Stack Test per §63.11212 and Table 4 to Subpart JJJJJJ of Part 63	Every three years

Units that cease burning solid waste and come under this regulation must be in compliance on the effective date of the waste to fuel switch if the effective date is after the applicable compliance date of this rule.

Source	Subcategory	Boiler Heat Input Capacity	Emission Limit or Work Practice	Initial Compliance Demonstration		
				Timing	Compliance Demonstration Options	Subsequent Performance Testing
Existing Source	Coal	≥10 MMBtu/hour	Mercury Emission Limit	180 days after the compliance date (3 years after date of publication of the final rule in the Federal Register)	Stack Test per §63.11212 and Table 4 to subpart 63 or Fuel Analysis per §63.11211(b)(1-3), §63.11213 and Table 5 to Subpart JJJJJ of Part 63	Stack Test: Every three years  Fuel Analysis: Monthly and before burning a new type of fuel or mixture.
Existing Source	Coal, Biomass, or Oil	≥10 MMBtu/hour	CO Emission Limit	180 days after the compliance date (3 years after date of publication of the final rule in the Federal Register)	Stack Test per §63.11212 and Table 4 to Subpart JJJJJ of Part 63	Every three years
Existing Source	Coal, Biomass, or Oil	< 10 MMBtu/hour	Work Practice Standard	No later than the compliance date (3 years after date of publication of the final rule in the Federal Register)	Biennial boiler tune-up per §63.11222 Submit Notification of Compliance Status Report with signed statement that a tune-up was conducted.	Biennial
Existing Source	Coal, Biomass, or Oil	≥10 MMBtu/hour	Energy Assessment	No later than the compliance date (3 years after date of publication of the final rule in the Federal Register)	Energy Assessment performed by qualified personnel Table 2 to Subpart JJJJJ of Part 63 Submit Notification of Compliance Status Report with signed statement that assessment was conducted.	N/A

Note that existing sources with only work practice requirements have one year to come into compliance with the standards and existing sources with numerical emission limits or a requirement to perform an energy assessment have 3 years to come into compliance with the standards.

## Continuous Compliance Requirements

### Monitoring, Installation, Operation, and Maintenance Requirements

- For boilers with an applicable opacity operating limit, must install and operate a COMS in accordance with §63.11223(d).
- Develop site-specific monitoring plan for any applicable emission limit for which you demonstrate compliance through stack testing. The site-specific monitoring plan must address §63.11223(b)(1-4)
- Monitor and collect data according to the site-specific monitoring plan
- Monitor continuously or collected data at all required intervals during the time that the affected source is operation except for during monitor malfunctions, associated requires and required quality assurance or control activities (i.e., calibration checks, zero and span adjustments).
- Do not include data recorded during monitoring malfunctions, associated repairs, or required quality assurance or control activities in data averages and calculations used to report emission or operating levels. All data collected during all other periods must be used in assessing the operation of the control device and associated control system.

Pollutant or Work Practice Standard	Control Device	Monitoring Requirement and/or Equipment	Operating Limits
If compliance is determined by stack testing:			
PM, Mercury	Fabric Filter	Opacity (COMS) OR Bag Leak Detection System	≤ 10% Opacity (daily block average), or Operate the fabric filter such that the bag leak detection system alarm does not sound more than 5% of the operating time during each 6-month period
PM, Mercury	Electrostatic Precipitator Control	Opacity (COMS) OR Voltage/current or total power	≤ 10% Opacity (daily block average), or Maintain the 12-hr block average injection rate at or above the operating levels established during the performance test
Mercury	Dry Scrubber or Carbon Injection Control	Opacity OR Sorbent or Carbon Injection Rate	≤ 10% Opacity (daily block average), or Maintain the 12-hr block average injection rate at or above the operating levels established during the performance test (can adjust for load)
PM, Mercury	Other dry control	Opacity	≤ 10% Opacity (daily block average)
PM, Mercury	Wet scrubber	Pressure drop and liquid flow rate	Maintain the 12-hr block average injection rate at or above the operating levels established during the performance test
CO	NA	O2 CEMS	Maintain O2 concentration (12-hr block average) at no less than 90 percent of the average concentration during the most recent performance test

Pollutant or Work Practice Standard	Control Device	Monitoring Requirement and/or Equipment	Operating Limits
All Pollutants	Control Device Not Covered by Rule	Apply to EPA for approval of alternative monitoring under §63.8(f).	Alternative Monitoring Parameters or Alternative Operating Limits
If compliance is determined by fuel analysis:			
Mercury	Fuel Analysis	Mercury content of fuel type or fuel mixture (annual average)	Maintain such that mercury emission rate is less than the applicable emission limit for mercury.  Fuel analysis and rate calculation required prior to burning any new fuel type. Stack test required within 60 days of burning new fuel if fuel analysis and calculation result in emissions higher than applicable limit.

A site-specific monitoring plan is required for facilities with CEMS/COMS/CPMS requirements.

### **Reporting Requirements**

Report	Due date
Initial Notification	Within 120 calendar days after the effective date of the standard or within 120 days after a source becomes subject to the standard.
Notification of Performance Test	60 days prior to scheduled date of test.
Notification of Compliance Status	Within 60 days of completion of the initial compliance demonstration.
Test report	Test results must be submitted to the EPA ERT within 60 days of completion.
Annual Compliance Certification for Previous Calendar Year	March 1 of each year.

If you intend to switch fuels, and this fuel switch may result in the applicability of a different subcategory or a switch out of subpart JJJJJJ due to a switch to 100 percent natural gas, you must provide 30 days prior notice of the date upon which you will switch fuels.

If you intend to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste.

### **Recordkeeping Requirements**

- Records demonstrating compliance with above requirements.
- Records documenting deviations and malfunctions.
- Monthly fuel type and use records.