



This regulatory summary is for informational purposes and serves only as a general reference. Refer to the regulation when evaluating its applicability to specific units.

overview

The rule applies to industrial, commercial, and institutional boilers at area sources of hazardous air pollutants (HAPs), with a few exemptions noted below. Area sources of HAPs have the potential to emit less than 10 tons per year of a single HAP or less than 25 tpy of a combination of all HAPs at the source.

The “area-source boiler GACT” rules* set emission limits or work practice standards, such as energy assessments, depending on fuel type and whether the boilers are new, reconstructed, or existing. New or reconstructed boilers are those whose construction or reconstruction began after June 4, 2010, at a source that was classified as an area source at that time. Boilers that commenced a switch from natural gas to solid fossil fuels, biomass, or liquid fuel after June 4, 2010, are also considered new sources. Existing area sources consist of all coal, biomass, and liquid-fuel boilers at a facility where HAP emissions are less than the 25/10 threshold and where boiler installation or reconstruction began on or before June 4, 2010.

On February 1, 2013, the U.S. EPA published the long-awaited reconsideration of the area-source boiler GACT. The reconsidered rule amends the one promulgated in March 2011, which was heavily criticized by industry as being too expensive and burdensome. The new rule adds some flexibility and increases emission limits for certain boilers based on reexamination of emissions data.

key information

initial compliance

- new sources—on startup
- existing sources—March 21, 2014

initial notification

notification form available at www.epa.gov/ttn/atw/boiler/boilerpg.html (under “Implementation Tools”)

- new sources—within 120 days of startup
- existing sources—January 20, 2014

notification of compliance

- new sources—within 120 days of startup or within 60 days of completing performance stack testing, if applicable (but no later than 180 days after startup)
- existing sources—July 19, 2014, for work-practice or management-practice standards (e.g., tune-ups) or energy assessment requirements (120 days after compliance date) and within 60 days of completing performance stack testing, if applicable (but no later than September 17, 2014)

emission limits

see attached summary tables

*National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial and Institutional Boilers

40 CFR Part 63 Subpart JJJJJJ

Federal Register, February 1, 2013, Volume 78, No. 22, pp. 7488–7521

exemptions (40 CFR 63.11195)

The rule has several exemptions for certain boilers, including:

- boilers that burn gaseous fuels not combined with any solid fuel or burn liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel
- boilers used in research and development
- boilers already subject to other §63 standards
- hot water heaters not more than 120 gallons in size or less than 1.6 MMBTU/hr heat-input capacity
- boilers used as control devices if the controlled-gas-stream supplies at least 50% of the average annual heat input during any three consecutive calendar years
- temporary, electric, and residential boilers as defined in the standard

Although not exempt, limited-use and seasonal boilers are subject only to work practice standards, including tune-ups as specified at 63.11223(d) and (f).

emissions and work practice standards

Emission limits for **new** coal-, biomass-, and oil-fired boilers and **existing** coal boilers with heat-input capacities of 10 MMBtu per hour or more are detailed in Table 1 (attached), which also provides summaries of the associated monitoring, performance testing and operating limits for these boilers. Table 3 details the work and management practice standards applicable to new and existing boilers, which include energy assessments and boiler tune-ups.



highlights of the reconsidered rule

The U.S. EPA adopted a number of provisions in the reconsidered rule that should clarify requirements and add flexibility for achieving compliance, including:

- exempting certain boilers from the rule or from numerical emission limits
- increasing mercury (Hg) and carbon monoxide (CO) limits for coal boilers
- adding monitoring options for continuous emission monitoring (CEMS) for CO
- providing a compliance alternative for PM limits for new boilers combusting only low-sulfur oil
- amending fuel analysis Hg compliance provisions to require no further fuel sampling if Hg constituents in the fuel are found to be less than half the limit during initial compliance demonstration
- reducing tune-up frequency for limited-use boilers, seasonal boilers, small oil-fired boilers, and boilers employing oxygen trim systems
- specifying that existing dual fuel-fired that switch from gas to coal, biomass, or oil are still considered existing sources
- clarifying tune-up and energy assessment procedures and scope
- extending compliance dates for initial notifications and tune-up for existing boilers

reporting and recordkeeping

The rule requires that an annual compliance-certification report be prepared by March 1 for the previous calendar year and submitted by March 15 to the EPA if deviations are identified. (Boilers with only biennial or five-year tune-up requirements can submit reports at corresponding intervals.) Notifications and recordkeeping for boilers subject to emission standards are summarized in Table 1.

key definitions

The following fuel definitions should be used to determine boiler category in Tables 1 and 3 or to evaluate the applicability of the exemption for gas-fired boilers.

The **biomass** subcategory includes any boiler that burns biomass and is not in the coal category.

Biomass means any biomass-based solid fuel that is not a solid waste. This includes but is not limited to wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips,

scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, and coffee-bean hulls and grounds. This definition of biomass fuel is not intended to suggest that these materials are or not solid waste.

The **coal** subcategory includes any boiler that burns any solid fossil fuel and no more than 15% biomass on an annual heat-input basis. Solid fossil fuel includes but is not limited to coal, petroleum coke, and tire-derived fuel.

The **oil** subcategory includes any boiler that burns any liquid fuel and is not in either the biomass or coal subcategories. Gas boilers that burn liquid fuel only during periods of gas curtailment, gas-supply interruptions, or for periodic testing of liquid fuel are not included in this definition. Liquid fuel includes but is not limited to petroleum, distillate oil, residual oil, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, and biodiesel.

Gas-fired boilers include any boilers that burn gaseous fuels not combined with any solid fuels and burn liquid fuel only during periods of gas curtailment, gas-supply interruptions, startups, or periodic liquid-fuel testing (testing must not exceed 48 hours total in any calendar year).

Gaseous fuels include but are not limited to natural gas, process gas, landfill gas, coal-derived gas, refinery gas, hydrogen, and biogas.



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TABLE 1
Area Source Boiler GACT
Final 40 CFR 63 Subpart JJJJJJ Emission and Operating Limits and Monitoring, Recordkeeping, and Reporting Requirements
February 1, 2013, Federal Register

Emissions ^[1]	Existing Coal (does not apply to limited use)	New Coal (does not apply to limited use)		New Biomass (does not apply to limited or seasonal use)		New Oil (does not apply to limited or seasonal use)
	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity ≥30 MMBtu/hr	Heat Input Capacity Between 10 and 30 MMBtu/hr	Heat Input Capacity ≥30 MMBtu/hr	Heat Input Capacity Between 10 and 30 MMBtu/hr	Heat Input Capacity ≥10 MMBtu/hr
Filterable PM (lb/MMBtu) ^[2]	--	0.03	0.42	0.03	0.07	0.03 (may waive limit if S ₂ ≤ 0.5%)
Mercury (lb/MMBtu) ^[2]	2.2 E-05	2.2 E-05	2.2 E-05	--	--	--
CO (ppmvd) ^[3]	420 ppm (@ 3% O₂)	420 ppm (@ 3% O₂)	420 ppm (@ 3% O₂)	--	--	--
Additional Source Categories: Limited-use and seasonal-use categories now available; no emission limits are included for those units. Temporary and residential boilers are exempt from the rules.						

[1] Units must achieve less than or equal to the stated emission limits except during periods of startup and shutdown. Emission averaging is not allowed in the final regulation. See Table 1 of Subpart JJJJJJ for emission standards.

[2] lb/MMBtu = pound per million British thermal unit of heat input.

[3] ppmvd = parts per million by volume on a dry basis corrected to 3% oxygen.

TABLE 2
Area Source Boiler GACT
Final 40 CFR 63 Subpart JJJJJJ Monitoring and Testing Requirements
February 1, 2013, Federal Register

<p>Performance Tests</p>	<ul style="list-style-type: none"> For existing affected boilers that have applicable emission limits, initial compliance must be demonstrated no later than 180 days after compliance date of March 21, 2014, which is September 17, 2014; new or reconstructed affected sources must demonstrate initial compliance no later than 180 days after March 21, 2011, which is September 17, 2011, or within 180 calendar days after startup of the source, whichever is later. Stack testing to show compliance must be completed every three years (with no more than 37 months between tests). If initial stack test shows emissions < 50% of the PM limit, no additional testing is required. If emissions are ≥ 50% of the emission limit, testing must be completed every three years (with no more than 37 months between tests). If compliance is to be shown through fuel sampling, and initial fuel sampling shows Hg concentrations in the fuel < 50% of concentrations at the emission limit, no additional fuel monitoring is required. If they are ≥50% of the Hg emission limit, quarterly sampling is required. Compliance with CO emission limits requires CO CEMS OR a CO stack testing and an oxygen monitoring system. No initial stack test is required if using a CO CEMS for determining compliance. Stack tests must be done every three years, with no more than 37 months between tests. For units with an opacity limit, monitor opacity continuously OR monitor control equipment operating parameters and abide by Operating Limits (see below)
<p>Operating Limits</p>	<ul style="list-style-type: none"> Fabric Filter – Maintain to ≤ 10% opacity (daily block average) – OR – Bag leak detection system that does not alarm more than 5% of operating time in 6-month period. Electrostatic Precipitator – Maintain to ≤ 10% opacity (daily block average) or maintain 30-day rolling average secondary power input of ESP at or above the lowest 1-hr. average secondary electric power measured during most recent PM or Hg performance test. Wet Scrubber – Maintain 30-day rolling average pressure drop and liquid flow-rate at or above the lowest 1-hr. average values established during most recent performance test. Dry Sorbent or Carbon Injection – Maintain 30-day rolling average sorbent or carbon injection rate at or above the lowest hourly average carbon injection rate measured during most recent Hg performance test (can adjust for load). Any Other Add-On Air Pollution Control (for boilers that operate dry control systems) – Maintain to ≤ 10% opacity (daily block average) Fuel Analyses – Maintain fuel type or fuel mixture (annual average) so that calculated emissions rates following 40 CFR 63.11211(c) are less than applicable limits. Operating Load – Maintain operating load of each unit such that it does not exceed 110% of the average operating load recorded during most recent performance test. Continuous Oxygen Monitor – Maintain the 30-day rolling average oxygen level at or above lowest 1-hr. average oxygen level measured during most recent CO performance stack test.
<p>Notifications / Reports</p>	<ul style="list-style-type: none"> Initial Notification – For existing units that have not completed the initial notification, it is due January 20, 2014. Initial Compliance Status – Submit Notification of Compliance Status no later than 120 days after applicable compliance date unless performance stack test must be conducted, in which case notification is due within 60 days after completing the performance test. If data from previously conducted emission test serves as documentation of conformance with emission standards/operating limits, test data must be submitted with the Notification of Compliance Status. Submit by July 19, 2014, for energy assessments and existing units requiring tune-up. Annual Compliance Certification Report – By March 1 of each year for the previous calendar year (or March 15 if deviation data must be reported). Boilers only subject to biennial or 5-year tune-up and not emission/operating limits, may submit biennial or 5-year compliance report as applicable. When commencing or recommencing the combustion of solid waste, notice is required within 30 days of making the change. If a source becomes subject to the standard because of a change from major source to area source, notice is required within 30 days of making the change. If a source switches fuels which may result in the applicability of a different subcategory (or a switch out of Subpart JJJJJJ due to a switch to 100% natural gas), notice is required within 30 days Performance Test – Submit Notification of Intent to conduct test at least 60 days prior to test and notification of compliance status within 60 days of test completion along with test results. Notifications and/or Performance Testing may need to be submitted through EPA’s electronic reporting systems (www.epa.gov/cdx and www.epa.gov/ttn/chief/ert) Notifications of malfunctions resulting in exceedance of emission limits or operating parameters must be included in the first compliance report due after the event, unless that report is due within 45 days of the event. In that case, it can be submitted in the second report due after the event.
<p>Monitoring</p>	<ul style="list-style-type: none"> All boilers in Table 1 with a CO limit must install CEMS according to Part 60 OR install an oxygen analyzer system and maintain O₂ at a concentration at or above the lowest concentration established during the most recent CO performance test. (30-day rolling block average concentration of O₂ monitored). Boilers showing compliance by using the oxygen analyzer system must do a CO performance test to develop the operating limit for O₂. Site-specific monitoring plan for each continuous monitoring system (CMS), containing operational information on the CMS and ongoing operation, maintenance and data quality assurance procedures; must conduct performance evaluation of each CMS in accordance with site-specific monitoring plan (40 CFR 63.11224(c)). Site-specific monitoring plan must be submitted, if requested, at least 60 days prior to the monitoring system performance evaluation. All boilers with an opacity operating limit must install, operate, certify and monitor a continuous opacity monitoring system (COMS). (40 CFR 63.11224(e)) Boilers using fabric filter bag leak detection systems must provide output of relative or absolute PM loadings, detection certified to 10 mg/actual cubic meters, a device to continuously record the sensor output signal, and an audible or visible alarm (40 CFR 63.11224(f))
<p>Recordkeeping</p>	<ul style="list-style-type: none"> Each submitted notification and report and all supporting documentation Records documenting conformance with work practices, emission reduction measures and management practices Fuel analysis and other supporting documentation for mercury calculations (if applicable) Occurrence and duration of boiler or air pollution control or monitoring equipment malfunction – and actions taken to minimize emissions during malfunction periods Inspections and monitoring data (e.g., CEMS/COMS data, operating limits monitoring and stack tests) Bag-leak-detection-system records (as applicable) including system output, adjustments, alarms and associated corrective action

TABLE 3
Area Source Boiler GACT
Final 40 CFR 63 Subpart JJJJJJ Work Practice Standards
February 1, 2013, Federal Register

Work Practice Standards ^[1]	NEW COAL		NEW BIOMASS		NEW OIL		
	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity <10 MMBtu/hr	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity <10 MMBtu/hr	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity >5 MMBtu/hr)	Heat Input Capacity ≤5 MMBtu/hr)
	Minimize boiler startup and shutdown periods following manufacturer's procedures	Conduct a boiler tune-up biannually per §63.11223	Minimize boiler startup and shutdown periods following manufacturer's procedures Conduct a boiler tune-up biannually per §63.11223	Conduct a boiler tune-up biannually per §63.11223	Minimize boiler startup and shutdown periods following manufacturer's procedures Conduct a boiler tune-up biannually per §63.11223	Conduct a boiler tune-up biannually per §63.11223	Conduct a boiler tune-up every five years per §63.11223
Work Practice Standards ^[1]	EXISTING COAL		EXISTING BIOMASS		EXISTING OIL		
	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity <10 MMBtu/hr	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity <10 MMBtu/hr	Heat Input Capacity ≥10 MMBtu/hr	Heat Input Capacity >5 MMBtu/hr	Heat Input Capacity ≤5 MMBtu/hr
	Minimize boiler startup and shutdown periods following manufacturer's procedures Have a qualified assessor perform a one-time energy assessment by March 21, 2014.	Conduct a boiler tune-up biannually per §63.11223, the first one due by March 21, 2014.	Conduct a boiler tune-up biannually per §63.11223, the first one due by March 21, 2014. Conduct one-time energy assessment performed by a qualified assessor by March 21, 2014.	Conduct a boiler tune-up biannually per §63.11223, the first one due by March 21, 2014.	Conduct a boiler tune-up biannually per §63.11223, the first one due by March 21, 2014. Conduct one-time energy assessment performed by a qualified assessor by March 21, 2014.	Conduct a boiler tune-up biannually per §63.11223, the first one due by March 21, 2014.	Conduct a boiler tune-up biannually per §63.11223, the first one due by March 21, 2014.

For units that are seasonal, have limited use, or have an oxygen trim system (and maintain an optimum air-to-fuel ratio), tune-ups may be performed every five years instead of biannually. New and reconstructed units need not do an initial tune-up. Initial tune-ups and one-time energy assessments must be completed before March 21, 2014, and a Notification of Compliance must be completed for each.

[1] See Table 2 of Subpart JJJJJJ for work-practice standards