

National Emission Standards for Hazardous Air Pollutants for Area Sources
Industrial, Commercial, and Institutional Boilers, Subpart JJJJJJ (6J)
(NC Division of Air Quality / "Boiler GACT" Summary)
Final Version June 16, 2011

NCDAQ is still in the process of evaluating this rule and this summary may not address all applicable requirements. NCDAQ is not responsible for errors or omissions that may be contained herein. Compliance with an applicable federal and/or state rule is the responsibility of the owner or operator.

FINAL RULE: March 21, 2011 / 40 CFR 63 Subpart JJJJJJ / FR 15554 Vol. 76 No. 54. Effective date of rule is May 20, 2011.

COMPLIANCE DATES (§63.11196):

March 21, 2012: The owner or operator of an existing source subject to a work practice or management practice standard of a tune-up is required to comply with this final rule no later than March 21, 2012.

March 21, 2014: The owner or operator of an existing source subject to emission limits or an energy assessment requirement is required to comply with this final rule no later than March 21, 2014.

May 20, 2011 or startup: The owner or operator of a new source is required to comply on May 20, 2011 or upon startup of the facility, whichever is later. If you start up a new source on or before May 20, 2011, you must achieve compliance with the provisions of this subpart no later than May 20, 2011. If you start up a new source after May 20, 2011, you must achieve compliance upon startup of your affected source.

AFFECTED SOURCES (§63.11193-11195):

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler that is located at an area source of hazardous air pollutants (HAP) and burn solid and liquid fuels; boilers burning gaseous fuels as defined below are not subject. An affected source is an *existing source* if you commenced construction or reconstruction of the affected source on or before June 4, 2010; it is a *new source* if you commenced construction or reconstruction of the affected source after June 4, 2010.

Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady state, process wherein fuel and/or oxidizer feed rates are controlled. Waste heat boilers are excluded from this definition.

Boilers not subject include (see §63.11195): gas-fired boilers and hot water heaters, R&D, solid waste and hazardous waste combustors, boilers used as control devices.

Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Period of natural gas curtailment or supply interruption means a period of time during which the supply of natural gas to an affected facility is halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas does not constitute a period of natural gas curtailment or supply interruption.

Gaseous fuels include natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas. LPG is included in the definition of natural gas.

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. 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 psig, including the apparatus by which the heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210 degrees Fahrenheit.

BOILER GACT APPLICABILITY CRITERIA SUMMARY:

1. The boiler is an industrial, commercial, or institutional boiler per the definitions in §63.11237.
2. Meets area source definition: Facilities with HAP emissions < 10 ton/year for a single HAP or < 25 ton/year for multiple HAPs.
3. Meets boiler definition:
 - *Boiler* means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady state, process wherein fuel and/or oxidizer feed rates are controlled.
 - Process heaters exchanging heat to non-water fluids are not covered. Besides process heaters, other units not subject to the rule are gas-fired boilers and hot water heaters with capacity < 120 gallons, waste heat boilers, R&D combustors, solid waste and hazardous waste combustors, and boilers used as control devices.
4. Burns fuel types meeting the definitions in the rule such as liquid fuels or solid fossil fuels and/or biomass. *Fuel type* means each category of fuels with a common name or classification. Examples include bituminous coal, lignite, anthracite, biomass, distillate oil, and residual oil. The three fuel subcategories are as follows:
 - Coal subcategory includes any boiler that burns any solid fossil fuel and no more than 15 percent biomass on an annual heat input basis. *Solid fossil fuel* includes, but not limited to, coal, petroleum coke, and tire derived fuel.
 - Oil subcategory includes any boiler that burns any liquid fuel and is not in either the biomass or coal subcategories. *Liquid fuel* means, but not limited to, petroleum distillate oil, residual oil, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, and biodiesel.
 - Biomass subcategory includes any boiler that burns at least 15 percent biomass on an annual heat input basis. *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, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.

Note: Boilers burning gaseous fuel types are not subject to the rule; examples covered include natural gas, LPG, process gas, landfill gas (meeting rule specifications), coal derived gas, refinery gas, hydrogen, and biogas. Solid waste combustors are not subject to this rule.

5. Meets boiler heat input size criteria:
 - Small boilers are < 10 MMBtu/hr, and subject to tune-ups but not energy assessment
 - Large boilers are = > 10 MMBtu/hr, and depending on the fuel type and existing/new status, may be subject to tune-ups, one-time energy assessment, emission standards, and related compliance requirements.

EMISSION LIMITS, WORK PRACTICE STANDARDS, EMISSION REDUCTION MEASURES, AND MANAGEMENT PRACTICES

(NCDAQ Summary / §63.11200-11201 / See also Tables 1-3 in Subpart JJJJJ):

Source Category	Fuel Category	Heat Input, MMBtu/hr	Emission Limits (EL)			Work Practice Standard Boiler tune-up every two years	Work Practice Standard Energy Assessment (EA)	Work Practice Standard Minimize startup/shutdown periods per manufacturer (MSS)	Compliance Date	Initial Notification Due	Notification of Compliance Status Due
			PM lb/ MMBtu	Hg lb/ MMBtu	CO ppm						
All (coal/oil/biomass) fuel-fired boilers, except any gaseous fuel-fired boilers		< 10	None			Yes	No	NA	Existing: 3/21/12 New: 5/20/11 or startup, whichever is later	Same as those below	120 days after compliance date
Existing	Coal	≥ 10	None	4.8E-6	400 @3% O ₂	No	One time energy assessment (EA)	Yes	3/21/12 MSS 3/21/14 (EA and EL)	<u>Existing Sources:</u> 9/17/11	60 days after stack test
	Biomass			None	None	Yes		No			3/21/12 tuneup / 3/21/14 EA
	Oil					Yes					
New	Coal	≥ 10 < 30	0.42	4.8E-6	400 @3% O ₂	No	No	Yes	5/20/11 or startup, whichever is later	<u>New sources:</u> Within 120 days after startup or 9/17/11, whichever is later	60 days after stack test
		≥ 30	0.03			No					
	Biomass	≥ 10 < 30	0.07	None	None	Yes					
		≥ 30	0.03			Yes					
	Oil	≥ 10 < 30	0.03	None	None	Yes					
		≥ 30	0.03			Yes					

- See Table 3 in the rule for “operating limits for boilers with emission limits” (for add-on controls, fuel analysis, stack testing, continuous O₂ monitor - required for CO standards).

Can demonstrate compliance with the mercury limits by fuel sampling.

- Stack Testing: New sources by 9/17/11 (180 days after March 21, 2011), or within 180 days of startup, whichever is later. Existing sources: within 180 days of the compliance date.

GENERAL COMPLIANCE REQUIREMENTS (§63.11205):

- A. §63.11205(a) - General Duty Clause - Applies to all affected units. At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
- B. §63.11205(b) - Fuel Analysis - Applies only to all coal-fired units (≥ 10 MMBtu/hr). You can demonstrate compliance with any applicable mercury emission limit using fuel analysis if the emission rate calculated according to §63.11211(c) is less than the applicable emission limit. Otherwise, you must demonstrate compliance using stack testing.
- C. §63.11205(c) - Site Specific Monitoring Plans - Applies only to all coal-fired units, new biomass, and new oil-fired units (all need to be ≥ 10 MMBtu/hr). Must submit a site specific monitoring plan 60 days before an initial performance test if using a CEMs, COMs, or continuous parameter monitoring system.

INITIAL COMPLIANCE REQUIREMENTS (§63.11210-11214):

- A. Stack Testing for sources subject to Table 1 emission limits - Applies only to all coal-fired units, new biomass and new oil-fired units (all need to be ≥ 10 MMBtu/hr).
- Must conduct stack testing per §63.11212 and Table 4. New sources must demonstrate initial compliance (stack testing) by September 17, 2011 (180 days after March 21, 2011), or within 180 days of startup, whichever is later. Existing sources must demonstrate initial compliance (stack testing) within 180 days of the compliance date.
 - Must establish operating limits per Table 6 and §63.11211(b)(1-4).
 - Performance tests must follow the requirements of §63.11212 (develop site specific test plan, Table 4, 3 separate runs, representative load conditions for highest emission fuel, etc.). For subcategories with more than one emission limit, these requirements could result in the need to conduct more than one performance stack test.
 - Following each performance stack test and until the next stack test, you must comply with the operating limit for operating load conditions specified in Table 3 of the subpart.
 - Electronic Stack Data Test Reporting to EPA – Per §63.11225(e), as of January 1, 2012 and within 60 days after the date of completing each performance test, the facility must submit relative accuracy test audit (i.e., reference method) data and performance test (i.e., compliance test) data, except opacity data, electronically to EPA’s Central Data Exchange (CDX).
- B. Fuel Sampling / Sources subject to optional mercury fuel sampling requirements - Applies only to all coal-fired units ≥ 10 MMBtu/hr. Conduct fuel analysis per §63.11213(a-c), Table 5, and §63.11211(c)(1-3). New sources must demonstrate initial compliance (fuel sampling) by September 17, 2011 (180 days after March 21, 2011), or within 180 days of startup, whichever is later. Existing sources must demonstrate initial compliance (fuel sampling) within 180 days of the compliance date.

C. Work practice standards, management practices, or emission reduction measures

- Existing boilers must demonstrate compliance no later than the compliance date mentioned in the above table. New boilers must comply by May 20, 2011 or at facility startup, whichever is later.
- Tune-ups - §63.11214 (a)(b) Boilers required to have performance tune-ups must submit a signed statement in the Notification of Compliance Status that the tune-up was conducted. The initial tune-up for new sources is required no later than May 20, 2011 or upon start-up of the boiler, whichever is later. The initial tune-up for existing sources is required by the compliance date as mentioned in the above table (3/21/12). Tune-up requirements are listed in §63.11223(b)(1-7).
- Energy Assessment - §63.11214(c) If an energy assessment was required, in the Notification of Compliance Status report indicate that an energy assessment of the boiler and its energy use systems was completed and submit, upon request, the energy assessment report. The energy assessment is required only for existing sources (≥ 10 MMBtu) and is required by the compliance date as mentioned in the above table (by 3/21/14). The energy assessment requirements are listed in Table 2 of the rule. The energy assessment must be performed by a qualified energy assessor.
- Startup/Shutdown - §63.11214(d) If you own or operate a boiler subject to emission limits in Table 1 of the subpart, you must minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available. You must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.

CONTINUOUS COMPLIANCE REQUIREMENTS (§63.11220-11224):

A. Ongoing Performance Testing (§63.11220)

- All applicable stack tests (PM, Hg, CO) must be conducted on a triennial basis. Tests must be completed no later than 37 months after the previous performance test (note EPA will be revising this section of the rule due to errors referencing annual testing).
- Fuel analysis Hg option - You must conduct a fuel analysis according to §63.11213 for each type of fuel burned monthly. If you plan to burn a new type of fuel or fuel mixture, you must conduct a fuel analysis before burning the new type of fuel or mixture in your boiler. You must recalculate the mercury emission rate using Equation 1 of §63.11211. The recalculated mercury emission rate must be less than the applicable emission limit.

B. Operating Parameter Monitoring and Continuous Compliance Requirements (§63.11221-11222)

- Monitor and collect data to demonstrate continuous compliance per §63.11221(a-d).
- Demonstrate continuous compliance with each emission limit of Tables 1 and 3 by methods in Table 7 and §63.11222(a-b). Following the date on which the initial compliance demonstration is completed you must continuously monitor the operating parameters. Operation outside the allowable range constitutes a deviation the established operating limits.
- §63.11222 (a)(2) If you have an applicable mercury or PM emission limit, you must keep records of the type and amount of all fuels burned in each boiler during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in lower emissions of mercury than the applicable emission limit (if you demonstrate compliance through fuel

analysis), or result in lower fuel input of mercury than the maximum values calculated during the last performance stack test (if you demonstrate compliance through stack testing).

- §63.11222 (a)(3) Mercury requirements if burning new fuels.
- §63.11222 (a)(4) Bagfilters and bag leak detection system requirements

C. Continuous Compliance with Work Practice and Management Standards (§63.11223)

- Biennial tune-up - Per §63.11223 must be conducted no more than 25 months after previous tune-up and maintain a copy on site. Tune-up requirements are listed in (§63.11223(b)(1-7)).
- Startups and shutdowns - (per 63.11223 and Table 2) If you own or operate an existing or new coal-fired boiler, new biomass, or new oil, with a heat input capacity of 10 million Btu per hour or greater, you must minimize the boiler's time spent during startup and shutdown following the manufacturer's recommended procedures and you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures.

D. Monitoring Requirements (§63.11225)

- CEMS Requirements - §63.11225(a) If your boiler is subject to a carbon monoxide emission limit in Table 1 to the subpart, you must install, operate, and maintain a continuous oxygen monitor according to the procedures in paragraphs (a)(1) through (6) of this section by the compliance date specified in § 63.11196. The oxygen level shall be monitored at the outlet of the boiler.
- Operating Limits for Control Devices - §63.11225(b) If you are using a control device to comply with the emission limits specified in Table 1 to the subpart, you must maintain each operating limit in Table 3 to the subpart that applies to your boiler as specified in Table 7 to this subpart.
- CMS / Monitoring Plan Requirements - §63.11225(c-d) If you demonstrate compliance with any applicable emission limit through stack testing and subsequent compliance with operating limits, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (4) of the section. If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each continuous parameter monitoring system according to the procedures in paragraphs (d)(1) through (5) of the section.
- COMS Requirements - §63.11225(e) If you have an applicable opacity operating limit under this rule (applicable to sources demonstrating compliance with the applicable emission limits using fabric filter, electrostatic precipitator control, and other dry control systems), you must install, operate, certify and maintain each continuous opacity monitoring system (COMS) according to the procedures in paragraphs (e)(1) through (7) of this section by the compliance date specified in §63.11196.
- Fabric Filter Leak Detection System Requirements - §63.11225(f) If you use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate the bag leak detection system as specified in paragraphs (f)(1) through (8) of this section.

NOTIFICATION AND REPORTING REQUIREMENTS (§63.11225(a-b)):

- A. Initial Notification (per §63.9(b) and §63.11225(a)(2)) – Due 120 days after May 20, 2011 for existing sources (9/17/2011), or for new sources within 120 days after startup or 9/17/11, whichever is later.
- B. Notice of Intent to Perform Stack Test per §63.7(b), §63.9(e), and §63.11225(a)(3) is due 60 days prior to test.

- C. Notice of Compliance Status (per §63.11225(a)(4)) due 120 days after compliance date, unless stack test is required then 60 days after stack test.
- D. Annual Compliance Certification must be prepared by March 1 of each year starting in 2012 and submitted upon request, unless the source experiences any deviations from the applicable requirements then the report must be submitted by March 15. For boilers that are subject only to a requirement to conduct a biennial tuneup according to §63.11223(a) and not subject to emission limits or operating limits, you may prepare only a biennial compliance report.
- E. Site specific Monitoring Plan - Must submit a site specific monitoring plan according to §63.11205(c) 60 days before an initial performance test if using a CEMs, COMs, or continuous parameter monitoring system.
- F. Site specific test plan per §63.7 - Before conducting a required performance test, the owner or operator of an affected source shall develop and, if requested by the Administrator, shall submit a site-specific test plan to the Administrator for approval.
- G. Additional notification requirements for sources with continuous monitoring systems. Per §63.9(g) The owner or operator of an affected source required to use a CMS by a relevant standard shall furnish the Administrator written notification as follows: A notification of the date the CMS performance evaluation under §63.8(e) is scheduled to begin, submitted simultaneously with the notification of the performance test date required under §63.7(b). If no performance test is required, or if the requirement to conduct a performance test has been waived for an affected source under §63.7(h), the owner or operator shall notify the Administrator in writing of the date of the performance evaluation at least 60 calendar days before the evaluation is scheduled to begin.

RECORDKEEPING REQUIREMENTS (§63.11225(c)):

- A. Copies of all notifications.
- B. Keep records to document conformance with the work practices, emission reduction measures, and management practices:
 - Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.
 - Records documenting the fuel type(s) used monthly by each boiler, including, but not limited to, a description of the fuel, including whether the fuel has received a nonwaste determination by you or EPA, and the total fuel usage amount with units. If you combust nonhazardous secondary materials that have been determined not to be solid waste pursuant to §241.3(b)(1), you must keep a record which documents how the secondary material meets each of the legitimacy criteria. Note, per EPA guidance, "*Affected sources have discretion on the periods of fuel records maintained on-site. The records may be annual, monthly, or periodic, depending on fuel delivery frequencies.*"
- C. Fuel Analysis Records - For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation that were done to demonstrate compliance with the mercury emission limits.
- D. Malfunction Records - Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment. Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in

§63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.

- E. Inspection and Monitoring Data Records - Keep the records of all inspection and monitoring data required by §63.11221 and §63.11222, and the information identified in paragraphs §63.11225(c)(6)(i) through (vi) for each required inspection or monitoring.
- F. Bag Leak Detection Records per §63.11225(c)(7).
- G. Fuel Combustion Records - §63.11222 (a)(2) If you have an applicable mercury or PM emission limit, you must keep records of the type and amount of all fuels burned in each boiler during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in lower emissions of mercury than the applicable emission limit (if you demonstrate compliance through fuel analysis), or result in lower fuel input of mercury than the maximum values calculated during the last performance stack test (if you demonstrate compliance through performance stack testing).
- H. Site-Specific Monitoring Plan - §63.11225(c) If you demonstrate compliance with any applicable emission limit through stack testing and subsequent compliance with operating limits, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (4) of this section.
- I. Record Retention - You must keep each record for 5 years following the date of each recorded action.

MALFUNCTIONS (§63.11226):

- A. Notification of excess emissions during a malfunction:
 - Notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction.
 - Written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in §63.11201 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in (§63.11226(a)).

LINKS TO ADDITIONAL RESOURCES:

Final rule: <http://www.epa.gov/ttn/atw/boiler/fr21mr11a.pdf>

EPA Website (FACT Sheets, implementation tools, etc.): <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>

NCDAQ Area Source NESHAP website: <http://www.ncair.org/toxics/areasources/areasourcetable.shtml>