

40 CFR Part 63, Subpart JJJJJJ
National Emission Standards for Hazardous Air Pollutants
for Area Sources:
Industrial, Commercial, and Institutional Boilers

**ENVIRONMENTAL REGS
(NOT SAFETY)
FOR BOILERS**

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Paid for, in part, by the Kansas Department of Health and Environment

Webinar logistics

- Everyone should be on mute; to speak, “raise your hand” or send message
- Listen through computer or telephone; if not using a phone, will need a microphone to speak
- Type questions anytime
- Can type questions in “comment or question box” in the navigation pane
- Webinar will be archived (www.sbeap.org)

Overview

- SBEAP
- Affected sources
- Compliance requirements
- Notification, reporting, record keeping
- Resources

Who's Kansas SBEAP?

- ◎ Kansas State University

- College of Engineering

- Engineering Extension

- Pollution Prevention Institute (PPI)

- Small Business Environmental Assistance Program (SBEAP)

Small Business Environmental Assistance Program



K A N S A S

SBEAP

Small Business Environmental Assistance Program

SBEAP's mission is to help Kansas businesses comply with environmental regulations and identify pollution prevention opportunities.

- Nancy Larson, Wichita
- David Carter, Manhattan
- Ryan Hamel, Olathe
- Barb Goode, Salina

Small Business Environmental Assistance Program

- Environmental compliance assistance
- Multimedia [air (mostly), waste, water, energy, GHG inventory and reporting, and EMS]
- Small- and medium-sized businesses (KDHE funded)
- Free and confidential
- Contact information
 - Web site: www.sbeap.org
 - Hotline: 800-578-8898
 - E-mail: sbeap@ksu.edu



Affected sources

- ⦿ 40 CFR Part 63, subpart JJJJJJ (6J)
- ⦿ **Area or major source**
- ⦿ Boiler definition
- ⦿ Subcategories of boilers
- ⦿ New or existing source
- ⦿ Size (heat input capacity)

Area vs Major Sources

- ◎ NESHAP – National Emission Standards for Hazardous Air Pollutants
 - **major** source – facility emits or has PTE at least 10 tons/yr single HAP or 25 tons/yr combinations of HAPs
 - **area** source – not a **major** source
 - www.epa.gov/ttn/atw/area/arearules.html
- ◎ CAA requires EPA to ID 30 most toxic HAPs in urban areas
- ◎ CAA requires EPA to ID area source categories representing 90% of emitters of these “Urban Dirty Thirty”

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What is a boiler?

- ⦿ Regulatory definition:

- *Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/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.*

What is a boiler?

- ◎ In other words:
 - *Boilers burn fuel, including natural gas, fuel oil, coal, biomass (e.g., wood), or other gas to produce steam or hot water. The steam is used to produce electricity, drive an industrial process, or provide heat.*
- ◎ Waste heat boiler and process heater do not meet the definition; therefore, not subject

Applicable boilers

- Industrial – *manufacturing, processing, mining, and refining or any other industry*
- Commercial – *hotels, restaurants, and laundries*
- Institutional – *hospitals/medical centers, nursing homes, research centers, schools, libraries, religious buildings, government buildings*

Boilers not subject

- Gas-fired – oil backup can be used during gas curtailment or interruption, startups, or periodic testing on liquid fuel (combined total 48 hr/yr limit on testing)
- Hot water heater – capacity ≤ 120 gal or hot water boilers w/heat input capacity < 1.6 MMBtu/hr, fueled by gas, liquid, or biomass; also, tankless unit provides on-demand hot water

Boilers not subject

- ⦿ **Temporary** –capable of being carried or moved from one location to another (steam tractor engines, hobby boilers)
- ⦿ **Residential** – dwelling w/≤ 4 families or single unit converted into apartments
- ⦿ **Electric** – electric heating serves as the source of heat; can use oil backup during electrical curtailment or failure

Boilers not subject

- ⦿ Electric utility steam generating unit (EGU) covered by subpart UUUUU
- ⦿ Research and development boilers
- ⦿ Hazardous waste boilers
- ⦿ Boilers subject to
 - other NESHAP standards
 - CAA Sec. 129 standards
- ⦿ Boilers used as control devices for other NESHAP standards

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- Size (heat input capacity)

Subcategories of boilers

- Coal – burns solid fossil fuel and no more than 15% biomass
- Biomass – burns any biomass that is not a solid waste (e.g., wood, animal manure, wheat chaff, corn stalks)
- Oil – burns liquid fuel
- Seasonal boilers – shutdown at least 7 consecutive months, except for testing (not to exceed total 15 days); burns biomass or oil

Subcategories of boilers

- Oil-fired boilers w/heat input capacity ≤ 5 MMBtu/hr
- Boilers w/oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to biennial tune-up
- Limited-use boilers – burns any amount of solid or liquid fuels and has a federally enforceable average annual capacity factor of no more than 10%

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- ⦿ Size (heat input capacity)

New or Existing Source?

⦿ Existing Sources

- Began construction or reconstruction of boiler **on or before June 4, 2010**

⦿ New Sources

- Began construction or reconstruction of boiler **after June 4, 2010**
- Reconstruction definition – 40 CFR 63.2

Note: dual-fuel boiler switching from gas to regulated fuel after 6/4/10 is considered existing if boiler was designed to burn the alternate fuel

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- ⦿ **Size (heat input capacity)**
 - ≥ 10 MM Btu/hr
 - < 10 MM Btu/hr

Area Source Requirements

- Area or major source
- Boiler definition
- Subcategories of boilers
- New or existing source
- Size (heat input capacity)

EPA tool to help determine compliance requirements

<http://www.epa.gov/ttn/atw/boiler/imptools/fastfactsareasourcemarch2013.pdf>

Example boiler:

- Oil-fired
- Constructed on or before June 4, 2010
- Heat input capacity = 35 MMBtu/hr

Fast Facts: Area Source Requirements Industrial, Commercial, and Institutional Boilers 40 CFR Part 63, Subpart JJJJJ

Do the Emission Limits Requirements Apply?

Heat Capacity (Btu/Hr)	Existing Coal Units	New Coal Units	Existing Oil Units	New Oil Units	Existing Biomass Units	New Biomass Units
≥10 MM	Yes ¹	Yes ¹	No	Yes ^{1,2,3}	No	Yes ^{1,2}
<10 MM	No	No	No	No	No	No

Am I required to do a One-Time Energy Assessment?

Heat Capacity (Btu/Hr)	Existing Coal Units	New Coal Units	Existing Oil Units	New Oil Units	Existing Biomass Units	New Biomass Units
≥10 MM	Yes ¹	No	Yes ¹	No	Yes ¹	No
<10 MM	No	No	No	No	No	No

Am I required to do a Tune-Up Every 5 Years?

Heat Capacity (Btu/Hr)	Existing Coal Units	New Coal Units			Existing Biomass Units	New Biomass Units	Existing Seasonal or limited use units	New Seasonal or limited use units
≥10 MM	No	No			Yes ⁴	Yes ⁴	Yes	Yes
<10 MM	Yes ⁴	Yes ⁴			Yes ⁴	Yes ⁴	Yes	Yes
			Existing Oil Units	New Oil Units				
>5 MM			Yes ⁴	Yes ⁴				
<5MM			Yes	Yes				

¹ Provided the boiler does not meet the definition of limited-use boiler

² Provided the boiler does not meet the definition of seasonal boiler

³ Boilers combusting only oil containing >0.50 weight % sulfur or a mixture of 0.50 weight % sulfur oil with other fuels not subject to PM emission limit and do not use a post combustion technology (except a wet scrubber) are not subject to emission limits

⁴ Provided the boiler uses an oxygen trim system that maintains an optimum air-to-fuel ratio, otherwise tune-ups required biennially.

Area Source Requirements

- ⦿ 40 CFR Part 63, Subpart JJJJJJ Tables
- ⦿ Emission limits – Table 1
 - Operating limits – Table 3
 - Performance test requirements – Table 4
 - Fuel analysis requirements – Table 5
 - Establishing operating limits – Table 6
 - Demonstrating continuous compliance – Table 7

Area Source Requirements

- ◎ 40 CFR Part 63, Subpart JJJJJJ Tables
 - Work practice st'd/emission reduction measure/mgt practice (tune-up, energy assessment) – Table 2
 - Applicability of General Provisions – Table 8

Compliance dates - existing

- ⦿ Initial notification – January 20, 2014
 - Kansas form at www.sbeap.org
- ⦿ Initial compliance – March 21, 2014
 - Work/management practice (tune-up)
 - Energy assessment
 - Emission limits (demonstrate by September 17, 2014)

Compliance dates - new

- ⦿ Initial notification – January 20, 2014 or within 120 days after startup
 - Kansas form at www.sbeap.org
- ⦿ Initial compliance – upon startup
 - Work/management practice (tune-up no later than 25/60 mos after startup)
 - Energy assessment
 - Emission limits (demonstrate within 180 days after startup)

Notification dates

- ⦿ Initial notifications
 - January 20, 2014 or within 120 days after becoming subject
- ⦿ Notification of Intent to conduct a performance test, if required
 - 60 days before test is scheduled
- ⦿ Notification of Compliance Status
 - No later than 120 days after compliance date
 - Within 60 days of performance test, if req'd

Notification of compliance status

- ⦿ Initial tune-up
 - “This facility complies with the requirements in § 63.11214 to conduct an initial tune-up of the boiler.”
- ⦿ Energy assessment
 - “This facility has had an energy assessment performed according to § 63.11214(c).”
- ⦿ Performance test – provide more details

Compliance certification report

- ⦿ Due March 1 (for previous calendar yr)
 - Annual compliance certification report if subject to emission/operating limits
 - Biennial or 5-yr report according to tune-up requirement
 - Due March 15 if experienced deviations from applicable requirements. Report –
 - Deviations
 - Time period(s) they occurred
 - Corrective action(s) taken

Record keeping

- ⦿ Copies of notification and reports sent and backup documentation
- ⦿ Tune-up dates, procedures, specs
- ⦿ Copy of energy assessment report
- ⦿ Records of monthly fuel use (type & amount), if subject to emission limit
- ⦿ Seasonal boilers – track days of operation
- ⦿ Limited-use boiler – copy of permit w/limits and fuel use on days boiler is operating
- ⦿ Combust non-hazardous secondary materials – check regs

Electronic reporting

- Required for notification of compliance status and performance test reports, not initial reporting
- Compliance and Emissions Data Reporting Interface (CEDRI)
- EPA Central Data Exchange (CDX) (www.epa.gov/cdx)
- Planned to be ready by October 2013

Resources

- ⦿ Regulations – [40 CFR Part 63, subpart JJJJJJ](#) or
 - www.ecfr.gov, then search
 - Web search
- ⦿ EPA boiler sites
 - <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>
 - <http://www.epa.gov/boilercompliance/>
- ⦿ SBEAP air quality rules/boiler pages
 - <http://www.sbeap.org/aqrules>
 - <http://www.sbeap.org/aqrules/page/boilers>

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