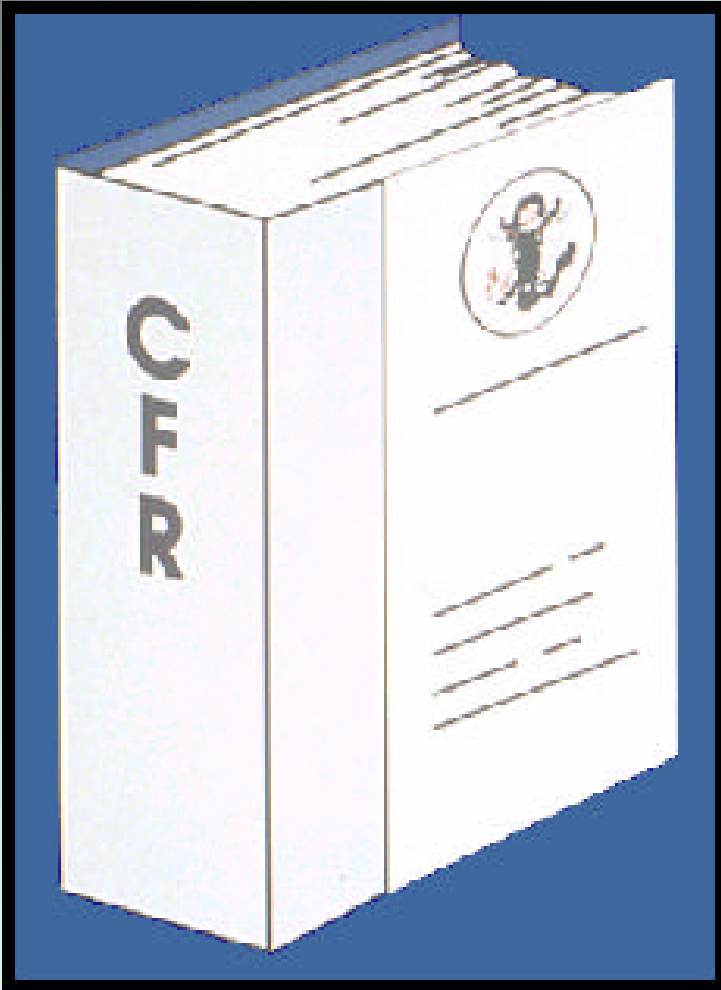




The “Boiler MACT” Is Here!
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CAPCA Fall Meeting
October 22, 2004

What is a “Boiler MACT?”



- National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters
- Signed February 26, 2004
- Promulgated as 40 CFR 63.7480 to 63.7575 (aka 40 CFR 63 Subpart DDDDD) September 13, 2004 (69FR55217).

In the Carolinas, what types of units might be affected by these regulations?

- Any industry using a boiler or process heater and which is a major source for emissions of Hazardous Air Pollutants
- Nationwide 60,000 units are covered by these requirements
- In North Carolina ~ 200 facilities
- In South Carolina ~ 275 facilities

And that would include?

- Manufacturers of lumber and wood products
- Pulp and paper mills.
- Chemical manufacturers
- Manufacturers of rubber and miscellaneous plastic products
- Steel works, blast furnaces
- Electroplating, plating, polishing, anodizing, and coloring.
- Manufacturers of motor vehicle parts and accessories.
- Electric, gas, and sanitary services.
- Health services.
- Educational services.

What types of combustion units are not covered by these regulations?

- municipal waste combustors
- hospital/medical/infectious waste incinerators
- electric utility steam generating units that are fossil fuel combustion units of more than 25 megawatts that produce electricity for sale
- commercial and industrial solid waste incineration units that are subject to other Clean Air Act requirements
- boilers and process heaters used for research and development
- low pressure and low volume hot water heaters
- blast furnace stoves
- blast furnace gas-fired boilers and process heaters
- boilers that are designed to be moved or carried from one location to another and which remain located at a particular location for less than 180 days
- boilers and process heaters specifically listed as affected sources in other standards under 40 CFR part 63.

What are the air pollutants of concern in these requirements?

HAP emitted by combustion processes

- Hydrogen chloride
- Hydrogen fluoride
- Arsenic
- Beryllium
- Cadmium
- Nickel
- Mercury

What are the air pollutants of concern in these requirements?

Surrogates

- Particulate matter
- Hydrogen chloride
- Carbon monoxide
- Mercury

What are the emissions limits or control requirements?

Depends

- Source type
- Source size
- New or existing source

Source Types

- Solid fuel units (SFU)
 - Units burning coal, wood, biomass, tires, plastics, and other non-fossil solid materials.
- Liquid fuel units (LFU)
 - Units burning distillate oil, residual oil, waste oil, and process liquids.
- Gaseous fuel units (GFU)
 - Units burning natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas.

Source Size

- Large (*l*)
 - rated capacity greater than 10 MM Btu/hour heat input and an annual capacity factor greater than 10%
- Limited Use (*lu*)
 - rated capacity greater than 10 MM Btu/hour heat input and an annual capacity factor less than 10%
- Small (*s*)
 - rated capacity less than or equal to 10 MM Btu/hour heat input
 - FYI, fire tube boilers considered small

New or Existing?

- New or reconstructed boilers or process heaters are those which commenced construction after January 13, 2003.

Emission Limits for Existing Sources

- SFU-/
 - particulate matter - 0.07 lbs/million Btu or
 - 0.001 lbs/million Btu of heat input for total selected metals
 - hydrogen chloride - 0.09 lbs/million Btu of heat input
 - mercury - 0.000009 lbs/million Btu of heat input

Emission Limits for Existing Sources

- SFU-*lu*
 - particulate matter - 0.21 lbs/million Btu of heat input
 - or 0.004 lbs/million Btu of heat input for total selected metals

Emission Limits for Existing Sources

- GFU
 - No emission limits
- LFU
 - No emission limits
- SFU-s
 - No emission limits

Emission Limits for New or Reconstructed Sources

- SFU-*l* and *lu*
 - Particulate matter - 0.025 lbs/million Btu of heat input or
 - 0.0003 lbs/million Btu of heat input for total selected metals
 - Hydrogen chloride - 0.02 lbs/million Btu of heat input
 - Mercury - 0.000003 lbs/million Btu of heat input
 - Carbon monoxide - 400 parts per million (corrected to 7 % oxygen)

Emission Limits for New or Reconstructed Sources

- SFU-s
 - Particulate matter - 0.025 lbs/million Btu of heat input or
 - 0.0003 lbs/million Btu of heat input for total selected metals
 - Hydrogen chloride - 0.02 lbs/million Btu of heat input
 - Mercury - 0.000003 lbs/million Btu of heat input

Emission Limits for New or Reconstructed Sources

- LFU-/
 - Particulate matter - 0.03 lbs/million Btu of heat input
 - Hydrogen chloride - 0.0005 lbs/million Btu of heat input
 - Carbon monoxide - 400 parts per million (corrected to 3 % oxygen)

Emission Limits for New or Reconstructed Sources

- LFU-*lu*
 - Particulate matter - 0.03 lbs/million Btu of heat input
 - Hydrogen chloride - 0.0009 lbs/million Btu of heat input
 - Carbon monoxide - 400 parts per million (corrected to 3 % oxygen)

Emission Limits for New or Reconstructed Sources

- LFU-s
 - Particulate matter - 0.03 lbs/million Btu of heat input
 - Hydrogen chloride - 0.0009 lbs/million Btu of heat input

Emission Limits for New or Reconstructed Sources

- GFU-*l* and *lu*
 - Carbon monoxide - 400 parts per million (corrected to 3% oxygen)
- GFU-*s*
 - No emission limits

Will additional control devices need to be installed on existing units?

- If existing SFU-*lu* commenced construction after June 1984 [40CFR60.40b] and June 1989 [40CFR60.40c] and if rated at greater than 30 million Btu/hour heat input - probably not (testing necessary particularly for wood burning units)
- If SFU-*l* or if existing SFU-*lu* commenced construction prior to June 9, 1989 or have a rating between 10 million and 30 million Btu/hour - maybe

How will one know if these limits are being met?

To demonstrate compliance

- Existing SFU-s, LFU-s, GFU-s
 - No compliance testing is necessary
- Existing LFU-*l* or *lu* or existing GFU-*l* or *lu*
 - No monitoring is required
- Existing SFU-*l* or *lu*
 - Source testing for particulates or total selected metals (the combination of the following metallic HAP- arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium).
- Existing SFU-*l*
 - Monitor emissions of hydrogen chloride and mercury

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- Existing SFU-s, LFU-s, GFU-s
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- Existing LFU-*l* or *lu* or existing GFU-*l* or *lu*
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- Existing SFU-*l* or *lu*
 - Source testing for particulates or total selected metals (the combination of the following metallic HAP- arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium).
- Existing SFU-*l*
 - Monitor emissions of hydrogen chloride and mercury

How will one know if these limits are being met?

To demonstrate compliance

- New or reconstructed SFU,
 - Source test for emissions of particulate matter, hydrogen chloride, and mercury
- New or reconstructed SFU-*l* or *lu*
 - Monitor emissions of carbon monoxide
- Alternative compliance options for new or reconstructed SFU include
 - Source test for emissions of total selected metals in lieu of particulate matter
 - Fuel analyses for determining emissions of hydrogen chloride and mercury.
- New GFU *l* or *lu*
 - Monitor emissions of carbon monoxide

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 - Fuel analyses for determining emissions of hydrogen chloride and mercury.
- New GFU *l* or *lu*
 - Monitor emissions of carbon monoxide

Will there be record keeping and reporting requirements?

- Existing SFU-s, LFU-s, or GFU-s or new GFU-s
 - No reporting and record keeping are required
- Existing LFU-*l* and *lu* or GFU-*l* and *lu*
 - Notify the appropriate air pollution control agency that it is subject to the requirements of the “Boiler MACT.”
 - No additional reporting or recordkeeping requirements
- Existing SFU-*l* or *lu*
 - Submit reports providing results of performance testing; semi-annual compliance reports and information on start-up, shut-down, or malfunctions (40 CFR 63.7545 and 63.7550)

Will there be record keeping and reporting requirements?

- New or reconstructed LFU that burn only fossil fuel and do not burn residual oil
 - Maintain records that demonstrate that only fossil fuels are used during the reporting period.
- For new or reconstructed GFU-*l* or *lu* or new or reconstructed SFU
 - Submit reports including results of initial performance testing, semi-annual compliance reports, and information on start-up, shut-down, or malfunctions (40 CFR 63.7545 and 63.7550)

Where can one go to obtain additional information regarding the “Boiler MACT?”

- A brochure can be found at EPA website:
<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>
- An applicability flow chart can be found at the EPA website:
http://www.epa.gov/ttn/atw/boiler/finalflowchart9_30_04.pdf

Existing Source Compliance September 13, 2007

Existing Source Compliance

March 12, 2005: Submit initial notification.

September 13, 2006: For sources demonstrating low risk for hydrogen chloride or manganese, submit eligibility demonstration.

For sources demonstrating compliance through fuel analysis, submit site-specific fuel analysis plan at least 60 days before demonstrating compliance.

September 13, 2007: Must be in compliance with all requirements of the Boilers NESHAP.

Submit Quality Assurance plan and test plan and notify EPA of performance test at least 30 days before performance test.

March 11, 2008 (latest date): Conduct initial performance test and opacity test no later than March 11, 2008 (advance notice required).

May 11, 2008 (latest date): Notify EPA of your compliance status within 60 days of completing the performance test or initial compliance demonstration.

July 31, 2008: Submit first semiannual compliance report.

For More Information

The Boilers NESHAP was published in the *Federal Register* on September 13, 2004. Copies of the rule and other materials are available at www.epa.gov/ttn/atw/boiler/boilerpg.html

Contact your regional EPA office.

REGION	STATES	PHONE
1	EPA New England (CT, MA, ME, NH, RI, VT)	617-918-1650
2	EPA Region 2 (NJ, NY, PR)	212-637-4080
3	EPA Region 3 (DE, MD, PA, VA, WV District of Columbia)	215-814-3483
4	EPA Region 4 (FL, NC, SC, KY, TN, GA, AL, MS)	404-562-9105
5	EPA Region 5 (IL, IN, MI, WI, MN, OH)	312-353-2211
6	EPA Region 6 (AR, LA, NM, OK, TX)	214-665-7224
7	EPA Region 7 (IA, KS, MO, NE)	913-551-7020
8	EPA Region 8 (CO, MT, ND, SD, UT, WY)	303-312-6007
9	EPA Region 9 (CA, AZ, HI, NV)	415-744-1219
10	EPA Region 10 (AK, ID, WA, OR)	206-553-4273

Or contact your state or local air pollution control agency for more information:



September 2004
www.epa.gov/ttn/atw/boiler/boilerpg.html
EPA-456/F-04-001

Office of Air Quality Planning & Standards

National Emission Standards for Hazardous Air Pollutants (NESHAP): Industrial, Commercial, and Institutional Boilers and Process Heaters

September 13, 2004, 69 FR 55218



Read the Boilers NESHAP carefully. The following information helps you determine how your boiler or process heater may be affected by the Boilers NESHAP. However, the Boilers NESHAP is complex and affects units differently based on rated heat input, fuel type, and utilization. Find the Boilers NESHAP and compliance information at www.epa.gov/ttn/atw/boiler/boilerpg.html.

Which units are affected?

Affected:

Boilers or process heaters located at a major source of hazardous air pollutants (HAP).

Major source: Potential to emit 10 tons/year of one HAP or 25 tons/year of all HAP combined. Emissions from the entire facility, including non-boiler or process heater sources, count toward major source status.

Hazardous air pollutants: Boilers and process heaters emit HAP such as arsenic, cadmium, chromium, hydrogen chloride, hydrogen fluoride, lead, manganese, mercury, and nickel. Emissions from each boiler or process heater vary. HAP are listed at www.epa.gov/ttn/atw/188polls.html.

Not Affected:

- Solid waste incineration units covered under section 129 of the Clean Air Act
- Units covered by another NESHAP under 40 CFR part 63 (including hazardous waste units, chemical recovery boilers at pulp mills, secondary lead refining kettles, ethylene cracking furnaces, blast furnace gas fuel-fired units)
- Hot water heaters, blast furnace stoves, temporary boilers
- Direct-fired (contact) combustion units (e.g., direct contact dryers) where the combustion gases come into contact with the process materials
- Research and development units

Affected units with no requirements or only initial notification:

- **No requirements:** Existing small units (all fuel types) and new small units (gas fuel) have no emission limits and no requirements: No monitoring, no records, no notifications.
- **Initial notification:** Existing large units (gas and liquid fuel), new small units (distillate oil only or combined with gas fuel) have no emission limits and submit only an initial notification. No other requirements.

Emission limits apply to these boilers or process heaters:

FUEL TYPE	EXISTING UNITS	NEW UNITS
Solid	PM or TSM HCl Hg	PM or TSM HCl Hg CO
Liquid	None	PM HCl CO
Gas	None	CO

- Solid:** Burns any amount of solid fuel
- Liquid:** Burns liquid fuel alone or with gas
- Gas:** Burns only gaseous fuel

Regulated Pollutants

- Particulate matter (PM) or total selected metals (TSM) as surrogate for metallic HAP. TSM: Arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, selenium
- Hydrogen chloride (HCl) as surrogate for inorganic HAP
- Mercury (Hg)
- Carbon monoxide (CO) as surrogate for organic HAP

NEW UNITS: Commenced construction or reconstruction on or after January 13, 2003

EXISTING UNITS: Commenced construction before January 13, 2003

SMALL UNITS: Any firetube boiler (regardless of size) and any other boiler or process heater ≤ 10 MMBtu/hr

LARGE UNITS: Any watertube boiler or process heater > 10 MMBtu/hr

Compliance Alternatives

Units can meet emission limits through a combination of the following:

- Conduct performance testing for units that have new or existing control devices
 - Use emissions averaging (certain units)
 - For HCl (measured as HCl and chlorine) and manganese, demonstrate low public risk
- For HCl, TSM, Hg, limit HAP content of fuel, demonstrate compliance through fuel analysis

Where can one go to obtain additional information regarding the “Boiler MACT?”

Jim Eddinger (email: eddinge.jim@epa.gov)

Combustion Group

Emission Standards Division (C439-01)

US EPA

Research Triangle Park, NC 27711

Telephone: 919-541-5426

Robert Bessette (email: bessette@cibo.org)

Council of Industrial Boiler Owners

6035 Burke Centre Parkway

Suite 360

Burke, Virginia 22015

Telephone: 703-250-9042

Where can one go to obtain additional information regarding the “Boiler MACT?”

David Painter (email: painter.david@epa.gov)

Program Implementation and Review Group

Information Transfer and Program Integration Division (E143-02)

US EPA

Research Triangle Park, NC 27711

Telephone: 919-541-5515

Frank Cramer (email: CRAMEREF@dhec.sc.gov)

Air Toxics Section

SCDHEC Bureau of Air Quality

Telephone: 803-898-3218

Keith Overcash (email: keith.overcash@ncmail.net)

North Carolina Division of Air Quality

1641 Mail Service Center

Raleigh, NC 27699-1641

Telephone: 919-733-3340