U.S. EPA Region I Webinar:
Understanding EPA's Major Source Boiler MACT Rule
November 21, 2013

- **Introductions**, George Frantz, U.S. EPA Region 1
- **Major Source Boiler MACT Rule Overview**, Jim Eddinger, U.S. EPA HQ
- **Electronic Reporting**, Colin Boswell, U.S. EPA HQ
- **Compliance Tools**, George Frantz, U.S. EPA Region 1
- **Question & Answers**, Susan Lancey, U.S. EPA Region 1, Jim Eddinger and Colin Boswell, U.S. EPA HQ

Major Source BOILER MACT Webinar

Overview of Requirements

November 21, 2013

Jim Eddinger
Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency

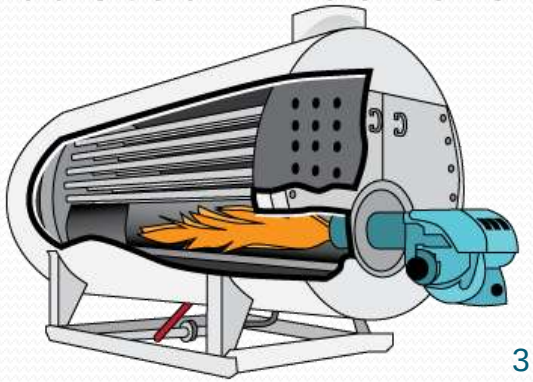
Agenda

- Applicability and Exemptions
- Important Dates
- Subcategories
- Emission Limits and Operating Limits
- Work Practice Standards
- Compliance Requirements
- Emission Averaging
- Monitoring
- Notifications, Reports, and Records
- General Provisions

Applicability (§63.7485)

- Source categories regulated
  - Industrial Boilers
  - Commercial and Institutional Boilers
  - Process Heaters
- If located at a MAJOR SOURCE of HAP
  - Boilers or process heaters do not need to be themselves a major source of HAP

- **There are about 14,100 boilers and process heaters located at major sources in the United States. The following fuels are commonly combusted in boilers:**
  - **Natural gas and other gases (More than 80%)**
  - **Liquid fuels (6%)**
  - **Coal (4.2%)**
  - **Biomass (3%)**
  - **Combinations of fuels**



Definitions (§ 63.7575)

- **Boiler** means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water.
  - Waste heat boilers are excluded from this definition.

- **Process heater** means a device use to transfer heat indirectly to a process material or to a heat transfer material for use in a process unit, instead of generating steam.
  - Process heaters are devices in which the combustion gases do not come into direct contact with process materials.

Affected Source (§63.7490)

- The collection of all existing boilers and process heaters within a subcategory

- Each new or reconstructed boiler or process heater
  - new if construction commence after **June 4, 2010**
  - reconstructed if you meet the reconstruction criteria and reconstruction commence after June 4, 2010

- A boiler or process heater is existing if it is not new or reconstructed.

WHAT UNITS ARE NOT COVERED? (§63.7491)

- Any boiler or process heater that is part of the affected source subject to another NESHAP.
- Any boiler or process heater listed as an affected source in any standard established under section 129 of the Clean Air Act (CAA).
- **Synthetic area sources – major sources with existing boilers and process heaters that become area sources prior to January 31, 2016**

WHAT UNITS ARE NOT COVERED? (cont.)

- Electric utility steam generating unit (EGU) covered by subpart UUUUU (i.e., MATS).
- Hazardous waste boilers.
- Any boiler or process heater used as a control device to comply with another subpart of part 60, 61, 63, or 65, provided at least 50% of average annual heat input is provided by gas streams subject to another standard.
- Residential boilers.
  - Provide heat and/or hot water for a dwelling containing four or fewer families, or a single unit residence converted into condominiums or apartments.

WHAT UNITS ARE NOT COVERED? (cont.)

- Recovery boiler or furnace covered by 40 CFR part 63, subpart MM.
- A boiler or process heater that is used specifically for research and development.
- Hot water heater as defined.
  - A capacity of no more than 120 gallons or a heat input capacity of 1.6 MMBtu/hr or less (not generating steam) heated by gaseous fuel, liquid fuel, or biomass.
- Refining kettle covered by 40 CFR part 63, subpart X.

WHAT UNITS ARE NOT COVERED? (cont.)

- Ethylene cracking furnace covered by 40 CFR part 63, subpart YY.
- Blast furnace stoves as described in the EPA document EPA-453/R-01-005.
- Temporary boilers or process heaters as defined.
  - Any gaseous or liquid fuel boiler or process heater that does not remains at a location for more than 12 consecutive months.
- Blast furnace gas fuel-fired boilers and process heaters.

IMPORTANT DATES (§63.7495)

Compliance Dates

- **Existing units – by January 31, 2016**
- **New units – upon startup**
- Have 180 days after the compliance date in which to demonstrate compliance with emission limits
- **Proposal Date – June 4, 2010**
  - Units which commenced construction before proposal are considered **EXISTING** units

SUBCATEGORIES (§63.7499)

- **Nineteen subcategories based on design type:**
  - Solid fuel
  - Pulverized coal units
  - Coal-fired stokers
  - Coal-fired fluidized bed combustion units
  - Coal-fired fluidized bed combustion units with fluidized bed heat exchanger
  - Biomass-fired stokers burning kiln-dried biomass
  - Biomass-fired stokers burning wet biomass
  - Biomass-fired fluidized bed combustion units
  - Biomass-fired Dutch Ovens
  - Biomass-fired Suspension burners
  - Biomass-fired fuel cells
  - Biomass-fired hybrid suspension/grate units
  - Heavy Liquid fuel-fired units
  - Light Liquid fuel-fired units
  - Liquid fuel-fired units located in non-continental States and territories
  - Gas 1 (Natural gas/refinery gas)
  - Gas 2 (other gases)
  - Metal processing furnaces (natural gas-fired)
  - Limited-Use

SUBCATEGORIES – Definitions (§63.7575)

- Solid fuel subcategory includes any boiler or process heater that burns at least 10% solid fuel on an annual heat input basis.
- Coal subcategory includes any boiler or process heater that burns at least 10% solid fossil fuel and no more than 10% biomass on annual heat input basis.
- Biomass subcategory includes any boiler or process heater that burns at least 10% biomass on annual heat input basis.
- Liquid fuel subcategory includes any boiler or process heater that burn any liquid fuel but less than 10% solid fossil fuel and less than 10% biomass on annual heat input basis.
  - Boilers and process heaters in the Gas 1 or Gas 2 subcategories that burn liquid fuel during periods of gas curtailment are not included in this subcategory.

SUBCATEGORIES – Definitions (§63.7575)

- Gas 1 subcategory includes any boiler or process heater that burns only NG or refinery gas and burns liquid fuel only during periods of gas curtailment or gas supply emergencies or for periodic testing (testing - not to exceed 48 hours during any calendar year).

- Gas 2 subcategory includes any boiler or process heater not in Gas 1 subcategory and burns gaseous fuel and less than 10% solid fossil fuel and less than 10% biomass and no liquid fuel.

- Limited-use boiler means any boiler that has a federally enforceable average annual capacity factor of no more than 10 percent.

EMISSION STANDARDS (§63.7500)

Existing Units

- Must meet each emission limit in Table 2 and each work practice standard in Table 3 that applies.
- Must meet each operating limit in Table 4 that applies.

New Units

- Must meet each emission limit in Table 1 and each work practice standard in Table 3 that applies.
- Must meet each operating limit in Table 4 that applies.

Compliance Requirements for Existing Units

- **Existing large boilers and process heaters (>=10mm/BTU)**
  - **Clean gas**
    - Annual tune-up
    - 1-time energy assessment
  - **Solid fuel (coal or biomass), Oil, Process gas that is not "clean" gas**
    - Numeric emission limits for 4 pollutants mercury, PM (or TSM), HCl, CO
    - Annual tune-up
    - 1-time energy assessment
  - **Limited Use**
    - Tune-up every other year
- **Existing small boilers and process heaters (<10mm/BTU)**
  - **Gas, solid fuel, oil**
    - Tune-up every other year
    - 1-time energy assessment

Compliance Requirements for New Units

- **New large boilers and process heaters (>=10mm/BTU)**
  - **Clean gas**
    - Annual tune-up
  - **Solid fuel (coal or biomass), Oil, Process gas that is not "clean" gas**
    - Numeric emission limits for 4 pollutants mercury, PM (or TSM), HCl, CO
    - Annual tune-up
  - **Limited Use**
    - Tune-up every other year
- **New small boilers and process heaters (<10mm/BTU)**
  - **Gas, solid fuel, oil**
    - Tune-up every other year

Total Selected Metals (TSM)

- Total selected metals means the combination of the following metallic HAP:
  - Arsenic
  - Beryllium
  - Cadmium
  - Chromium
  - Lead
  - Manganese
  - Nickel
  - Selenium

Operating Limits (Table 4 of subpart DDDDD)

For demonstrating continuous compliance

- **Fabric Filter**
  - Maintain opacity to less than 10% opacity (daily block average),

    OR
  - Install and operate a bag leak detection system
- **ESP**
  - Dry ESP: Maintain opacity to less than 10% opacity (daily block average),
  - Wet ESP: Maintain minimum total secondary electric power (30-day rolling average)
- **Wet PM scrubber**
  - Maintain minimum pressure drop (30-day rolling average), and
  - Maintain minimum liquid flow rate (30-day rolling average)

Operating Limits (cont.)

- **Wet Acid Gas Scrubber**
  - Maintain minimum effluent pH (30-day rolling average)
- **Dry sorbent or carbon injection**
  - maintain minimum sorbent or carbon injection rate (30-day rolling average)
- **Other dry controls**
  - Maintain opacity to less than 10% opacity (daily block average)
- **Fuel analysis (for mercury)**
  - Maintain fuel type or mixture

Operating Limits (cont.)

- **Performance stack testing**
  - Maintain operating load not to exceed 110% of the highest hourly operating load recorded during performance test. (30-day rolling average)
- **Continuous oxygen monitor**
  - Maintain minimum oxygen level (30-day rolling average)
- **SO_2 CEMS** (Alternative to HCl compliance)
  - Maintain the 30-day rolling average at or below the highest hourly average SO2 recorded during performance test.

Setting Operating Limits (Table 7 of subpart DDDDD)

Steps

- Collect parameter(s) data during performance test.
- Calculate the hourly averages.
- Determine the minimum (or maximum) parameter value which is the lowest hourly average (or highest) value measured during the most recent performance test demonstrating compliance with the applicable emission limit.

Work Practice Standards

- **Tune-ups**
  - Applicable to all affected boilers and process heaters.
- **Energy Assessment**
  - Applicable only to existing affected boilers and process heaters.
- **Startup and Shutdown Procedures**
  - Startup begins at firing of fuel for the purpose of supplying steam or heat and ends when steam or heat is supplied for any purpose.
  - Shutdown begins either when none of the steam or heat is supplied or at the point of no fuel being fired in the boiler, whichever is earlier. Shutdown ends when there is no steam and heat being supplied and no fuel being fired in the boiler.

Tune-up Requirement (§ 63.7540(a)(10))

- As applicable, **inspect the burner**, and clean or replace any components as necessary;
- **Inspect the flame pattern**, as applicable, and adjust the burner as necessary to optimize the flame pattern.
- **Inspect the system controlling the air-to-fuel ratio,** as applicable, and ensure that it is correctly calibrated and functioning properly;
- **Optimize emissions of CO** consistent with manufacturer's specifications, and with any NOx requirement to which the unit is subject .

Tune-up Requirement (cont.)

- **Measure** CO and oxygen before and after the adjustments are made.
  - May use a portable CO analyzer;

- **Maintain** on-site and submit, if requested, a report containing:
  - The CO and oxygen measured at high fire or typical operating load before and after the adjustments;
  - Description of any corrective actions taken; and
  - Type and amount of fuel used over the prior 12 months.

Tune-up Frequency Requirements

- **Tune-ups every 5 years for:**
  - Boilers and process heaters with oxygen trim systems
  - Limited-use boilers and process heaters with a federally enforceable annual average capacity factor of ≤ 10%
  - Gas-fired and light oil-fired boilers and process heaters with heat input capacity ≤ 5 MMBtu/hr
- **Tune-ups every 2 years for:**
  - Boilers and process heaters with heat input capacity <10 MMBtu/hr
- **Tune-ups every year**
  - Boilers and process heaters with heat input capacity ≥10 MMBtu/hr
- **Initial tune-ups are not required for new boilers and process heaters**

Energy Assessment
(Item 4 of Table 3 of subpart DDDDD)

- Must have a one-time energy assessment performed by a qualified energy assessor.
- Applicable only to affected existing boilers and process heaters.
- An energy assessment completed after January 1, 2008, satisfies the energy assessment requirement.
- An energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement.

Energy Assessment (cont.)

- Energy assessment must include the following:

(1) Visual inspection of the boiler and PH system,

(2) Evaluation of operating characteristics of affected boiler and PH systems and energy use systems,

(3) An inventory of major energy use systems,

(4) A review of available architectural/engineering plans, operation/maintenance procedures/logs, and fuel usage,

(5) A list of major energy conservation measures that are within the facility's control,

Energy Assessment (cont.)

(6) A list of the energy savings potential of the energy conservation measures identified, and

(7) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

NOTE:

The report is not required to be submitted.

The findings are not required to be implemented.

Energy Assessment Definitions

Energy Assessment Duration Requirements

If your Affected Boilers have a Combined Annual Heat Input Capacity, in Trillion Btu/yr (TBtu/yr), of …	Then the length of the energy assessment should not exceed…	And the energy assessment will include evaluation of energy use system(s) accounting for this percent of the energy output from these affected units…
Less than 0.3	8 on-site technical labor hours	At least 50%
0.3 to 1	24 on-site technical labor hours	At least 33%
Greater than 1.0	24 on-site technical labor hours for first 1.0 TBtu/year + 8 on-site technical labor hours for every additional 1.0 TBtu/year, not to exceed 160 on-site technical labor hours	At least 20%

Energy Assessment Definitions (cont.)

- Energy use system
  - located on site,
  - use energy provided by the affected boiler or process heater,
  - may be segmented by production area or energy use area (e.g., product X manufacturing area; Building Z).

- Qualified energy assessor
  - Person, or persons, that demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy use systems.
  - Has background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.
  - Familiar with the particular steam, process heating, and end-use systems.

Startup Procedures

Item 5 of Table 3 of subpart DDDDD

- Must operate all CMS during startup.
- Must use one or a combination of clean fuels.
- When start firing coal, biomass, heavy liquid fuel, or gas 2 (other) gases, must vent emissions to main stack and engage all of the applicable control devices except limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR.

Startup Procedures (cont.)

- Must start limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR systems as expeditiously as possible.
- Must collect monitoring data during startup periods.
- Must keep records during periods of startup.
- You must provide reports concerning activities and periods of startup.

Questions?

General and Initial Compliance Requirements (§63.7505, §63.7520, and §63.7521)

- **Standards apply at all times**
- Required Plan Development
  - Site-Specific Monitoring Plan
    - If demonstrate compliance by performance stack testing
    - Must be submitted for approval upon request
  - Site-specific Testing Plan
    - Before conducting a required performance test.
    - Not have to submit unless it is requested.
  - Site-specific Fuel Monitoring Plan
    - Before conducting a required performance test.
    - Not have to submit unless intend to use an analytical method other than in Table 6 of subpart DDDDD.

General and Initial Compliance Requirements (§63.7510)

- **Initial Compliance timelines**

Existing boilers

- Demonstrate compliance with emission limits by **July 29, 2016.**
- Demonstrate compliance with work practice standards (tune-up, energy assessment) by **January 31, 2016**.

New boilers

- Must demonstrate compliance with emission limits no later than July 30, 2013 or within 180 days after startup, whichever is later.
- **Not required to complete initial tune-up**, but required to complete the applicable annual, biennial or 5-year tune-up no later than 12, 25, or 61 months, respectively, after the initial compliance date.
- **Not subject to the energy assessment requirement.**

Subsequent Compliance Tests

If compliance based on performance stack test

- Conduct performance (stack) tests annually.
- If test results for 2 consecutive years are <75% of emission limit,
  - May conduct performance test for pollutant every third year.
  - must continue to comply with applicable operating limits and monitoring requirements.

If compliance based on fuel analysis

- Conduct a fuel analysis each month,
- Reduce to 12 month rolling average and maintain below emission limits
- Continue to comply with applicable operating limits and monitoring requirements.

COMPLIANCE OPTIONS

- May elect to comply with alternate TSM limit instead of PM limit.
- May elect to comply with alternate output-based limit instead of input-based limit.
- May elect to comply with alternate CO CEMS based limit instead of CO stack based limit.
- May elect to comply with mercury, HCl, or TSM limits by fuel analysis instead of by performance stack test.
- May elect to comply by emission averaging (§63.7522)
- Can earn efficiency credits from implementation of energy conservation measures to comply with output-based limits (§63.7533).

Performance Tests Requirements

- Must conduct each performance test according to the requirements in Tables 5 and 7.

- Must conduct performance tests at the maximum normal operating load while burning the type of fuel or mixture of fuels that have the highest content of chlorine, mercury, and total selected metals
  - must demonstrate initial compliance and establish your operating limits based on these tests.
  - **These requirements could result in the need to conduct more than one performance test.**

- May not conduct performance tests during periods of startup, shutdown, or malfunction.

Fuel Analysis Requirements

- Must conduct fuel analysis according to the requirements in §63.7521 and Table 6.
  - If using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6.
- At a minimum, must obtain three <u>composite</u> fuel samples for each fuel type

<u>Initial Compliance By Fuel Analysis</u>

- Must use equation 15 to demonstrate compliance
  - One-sided z-statistic test
  - P_{90} = mean + (SD * t)
- The 90th percentile confidence level (P90) must not exceed the applicable emission limit.
  - Based on worst fuel type or mixture

Emission Averaging (§63.7522)

- Only for existing units in same subcategory located at facility.
- Must maintain, at a minimum, the emission controls employed on the effective date
- May average PM or TSM, HCl, and mercury emissions to demonstrate compliance with the limits
- May demonstrate compliance by emission averaging if averaged emissions are not more than 90% of applicable emission limit.
- Initial compliance based on maximum capacity
- Continuous compliance on a 12-month rolling average basis determined at the end of every month (12 times per year)
  - Each monthly calculation based on monthly fuel use and previous compliance test results for each boiler
- Must develop an implementation plan for emission averaging
  - Must be submitted for approval upon request

Continuous Compliance

- Monitoring must be conducted as specified in the site-specific monitoring plan. [§63.7535(a)]
- Monitoring must be conducted continuously while the affected source is operating except when monitoring equipment is malfunctioning, being repaired, or during quality assurance activities. [§63.7535(b)]
- May not use data during startup and shutdown, monitoring malfunction, repair, or associated quality assurance activities in calculating averages to comply with the standard [§63.7535(c)]

Monitoring Requirements

- **<u>CO Continuous Compliance Monitoring</u>**
- Must either install and operate an oxygen analyzer system
- **OR**
- Install and operate a CO/oxygen CEMS

- CO CEMS
  - Boilers that use CO CEMS must comply with the alternate CO CEMS-based limits.
  - Boilers that use CO CEMS are exempt from initial CO performance testing and oxygen operating limit.
  - Must calculate hourly averages, corrected to 3 percent oxygen, and determine the 30 or 10-day rolling average.

- Oxygen analyzer
  - Must operate at or above the minimum oxygen level established.

Monitoring Requirements

COMS

- Install and certify COMS by compliance date
  - If you have an applicable opacity operating limit

- Must complete one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

- Must calculate and record 6-minute averages from the opacity monitoring data and determine and record the daily block average of recorded readings.

Monitoring Requirements

CPMS (continuous parameter monitoring system)

- Install each CPMS by the compliance date
- CPMS must
  - complete a minimum of one cycle of operation for each successive 15-minute period
  - must have a minimum of four successive cycles of operation to have valid hour of data.
  - conduct all monitoring at all times that the unit is operating.
- Determine the 30-day rolling average of all recorded readings

Monitoring Requirements (cont.)

PM CPMS (63.7525(b))

- Units in the coal or heavy liquid subcategories and have a heat input capacity >250 MMBtu/h that demonstrate compliance with the PM limit must install and operate a PM CPMS
- PM CPMS must have a cycle time no longer than 60 minutes.
- Complete initial performance evaluation no later than July 29, 2016.
- Calculate 30-day rolling averages
- For deviations, must within 30 days conducted a PM performance test.
- Deviations leading to 4 required performance tests in a 12-month period constitute a violation. (63.7540(a)(18)(iii))

Notifications

- Initial Notification of Applicability
  - Existing sources – No later than May 31, 2013
  - New sources – Within 120 days after source becomes subject
- New Sources
  - Notification to Construct (Section 63.9(b)(4))
  - Notification of Actual Startup (Section 63.9(b)(4))
    - within 15 days after startup

NOTIFICATIONS

- Notification of Performance Evaluation of Continuous Monitoring System (Section 63.9(g))
  - 60 days prior
- Notification of Compliance Status (63.7545(e))
  - No later than 120 days after applicable compliance date, unless conducting a performance test, then
  - Within 60 days following performance test
- Notification of fuel switch, physical change, or permit limitation resulting in applicability (63.7545(h))
  - Within 30 days of the switch/change

NOTIFICATIONS

- Notification of Performance Test
  - 60 days before
- Notification of intend to use another fuel during period of natural gas curtailment [section 63.7545(f)]
  - Within 48 hours of declaration of curtailment
  - Only units in the Gas 1 subcategory
- Notification of Intent to Demonstrate Compliance by Emission Averaging [section 63.7522(g)(1)]
  - 180 days prior to date of testing, if requested
- Notification of Intent to commence combustion of solid waste (§63.7545(g))
  - 30 days prior to date of solid waste combustion

REPORTING

Notification of Compliance Status

- Must include the applicable certification(s) of compliance signed by a responsible official.
  - "This facility complies with the requirements to conduct an initial tune-up …"
  - "This facility has had an energy assessment performed…"
  - "No secondary materials that are solid waste were combusted in any affected unit."
- Must submit results of all performance tests or CMS evaluations.
- Must submit all ongoing compliance reports, test results, CEMS audits results electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx).

REPORTING

Compliance certification report

- Semi-annually, except in some cases annually, biennially or every 5 years
  - Semi-annual reports submitted by July 31 or January 31
  - Annual, biennial, and 5 year reports submitted no later than January 31.
- Report must include statements that:
  - The facility complies with the requirements to conduct an annual, biennial or 5-year tune-up, as applicable, of each affected unit.
  - No secondary materials that are solid waste were combusted in any affected unit.
  - Total fuel use by affected boiler(s)
  - There were no Deviations from emission limits, operating limits, and CMS, if no deviations.
  - Description of any malfunctions and corrective actions taken.

Recordkeeping

- Copies of all notifications, plans, and reports submitted
- Records of all tune-ups
- Records of all secondary materials combusted
- Copy of the energy assessment
- ~~Copy of days of operation for seasonal boilers~~
- Records of all malfunctions
- Records of all compliance demonstrations (e.g., performance tests, fuel analysis, etc.)
- All monitoring data from CEMS, CPMS, and COMS.

Recordkeeping (cont.)

- Records of monthly fuel usage including type and amount of fuel used for each boiler subject to emission limits
- Records of all fuel analysis calculations
- If operating under federally enforceable permit restrictions to limit annual capacity factor, must maintain a copy of the permit and maintain fuel usage records of each boiler in the limited use category
- Records must be kept for five (5) years; at least two (2) years on-site

General Provision Options

- Alternative Test Methods (Section 63.7(f))
- Waivers of Performance Testing (Section 63.7(h))
- Alternative Monitoring (Section 63.8(f))
- Alternative to the work practice standards (Section 63.6(g))
- Compliance Extensions (section 63.6(i))
  - Sources unable to comply within 3 years
  - Apply within 120 days of compliance deadline

INFORMATION AND CONTACT

- Implementation tools (timelines, initial notification, state/local contacts, Q/A) and information on the major source rulemaking for industrial, commercial, and institutional boilers and process heaters is available on EPA's web sites at:
  - www.epa.gov/ttn/atw/boiler/boilerpg.html
- An electronic version of public docket (including public comments) is available at:
  - www.regulations.gov
  - Search for docket ID No. EPA-HQ-OAR-2002-0058
- **Contact:**
  - Jim Eddinger
  - 919-541-5426
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Appendix
Emission Limit Tables

Emission Limits for Boiler MACT

Subcategory	Limits for existing units, lb/MMBtu unless noted					Limits for new units, lb/MMBtu, unless noted				
	Hg, lb/TBtu	HCl	PM	CO , ppm(CO CEMS-Based)	D/F, ng/dscm	Hg, lb/Tbtu	HCl	PM	CO, ppm (CO CEMS-Based)	D/F
Coal stoker	5.7 Solid fuel subcat.	0.022 Solid fuel subcat.	0.040	160 (340)	Work practice	0.80 Solid fuel subcat.	0.022 Solid fuel subcat.	0.0011	130 (340)	Work practice
Coal fluid. bed			0.040	130 (230)	Work practice			0.0011	130 (230)	Work practice
Coal PC			0.040	130 (320)	Work practice			0.0011	140 (150)	Work practice
Biomass wet stoker—revised subcategory			0.037	1,500 (720)	Work practice			0.030	620 (390)	Work practice
Biomass fuel cell			0.020	1,100	Work practice			0.020	910	Work practice
Biomass fluid. Bed			0.11	470 (310)	Work practice			0.0098	230 (310)	Work practice
Biomass dutch oven/pile burner			0.28	770 (520)	Work practice			0.0032	330 (520)	Work practice
Biomass susp./grate			0.44	2,800 (900)	Work practice			0.026	1,100 (900)	Work practice
Biomass suspension			0.051	2,400 (2,000)	Work practice			0.030	2,400 (2,000)	Work practice
Biomass dry stoker			0.32	460	Work practice			0.030	460	Work practice
Heavy liquid	2.0	0.0011	0.062	130	Work practice	0.48	0.00044	0.013	130	Work practice
Light liquid	2.0	0.0011	0.0079	130	Work practice	0.48	0.00044	0.0011	130	Work practice
New gas 2	7.9	0.0017	0.0067	130	Work practice	7.9	0.0017	0.0067	130	Work practice
New non-cont. liquid	2.0	0.0011	0.27	130	Work practice	0.48	0.00044	0.023	130	Work practice

New and existing small (<10 MMBtu/hr) units, natural gas-fired units, metal process furnaces, units combusting other clean gases, and limited use units will be subject to work practice standards.

Major Source Boiler MACT; Compliance Assistance Webinar

FOR REGULATED ENTITIES

40 CFR PART 63; SUBPART DDDDD

SUMMARY OF TOOLS FOR COMPLIANCE

NOVEMBER 21,2013

GEORGE FRANTZ, EPA R1

Major Source Boiler MACT - Basics

- The Boiler MACT rule covers boilers and process heaters located at major source facilities that burn coal, oil, biomass, natural gas, or other solid, liquid, and gaseous non-waste materials.

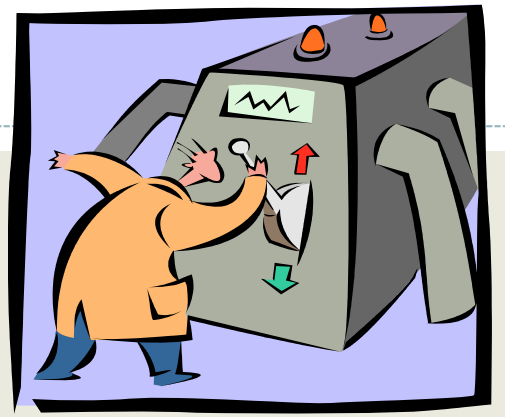
- Most boilers and process heaters covered by the Boiler MACT are located at industrial facilities

- If your facility is major for other pollutants, but not HAPs, you are an area source for HAPs.

Major Source Boiler MACT - Basics

- Large major source boilers and process heaters have a heat input capacity equal to or greater than 10 million British thermal units per hour (MMBtu/hr).
- Small major source boilers and process heaters have a heat input capacity less than 10 MMBtu/hr.
- Existing units commenced construction on or before June 4, 2010.
- New units commenced construction after June 4, 2010.

Tools for Compliance



The place to start:

- EPA's Major source boiler website:
  - Technology Transfer Network - http://www.epa.gov/ttn/atw/boiler/boilerpg.html
  - Major Source Boilers and Process Heaters: Small Entity Compliance Guide - http://www.epa.gov/ttn/atw/boiler/imptools/20130312complianceguide.pdf
  - Combustion Portal http://combustionportal.org/# provides general information on industrial, commercial & institutional boilers

Compliance Dates

- Initial notification - deadline for existing major source boilers **was May 31, 2013**
- For new sources, with startup after 5/31/13, within 15 days of startup (or other applicable demonstration)
- Energy assessment - existing boilers which are subject to the requirement must complete assessment by **January 31, 2016**.
- Boiler tune-ups – Deadline for submitting Notification of Compliance Status (NOCS) is 60 days after completion of all initial compliance demonstrations (e.g., due March 31, 2016 for existing boilers only subject to a tune-up requirement)

Compliance: Small Entity Compliance Guide

- **How Do I Determine my Subcategory?**
- To determine your subcategory, answer six questions:
  - What fuels are combusted in my boiler or process heater?
  - What design type is my boiler or process heater?
  - What percentage of the annual heat input is supplied by each fuel type?
  - Is my boiler or process heater a new source or an existing source?
  - What size is my boiler or process heater?
  - What is the annual capacity factor of the boiler or process heater?

Compliance: Which Tasks Must I Complete?

- Based on your subcategory (i.e. fuel, combustor type, new/existing, size considerations), use Appendix A to determine which tasks you must complete. The task requirements are summarized below.
- Task 1: Submit initial notifications
- Task 2: Comply with work practice standards
- Task 3: Meet emission limits
- Task 4: Keep records
- Task 5: Submit other notifications and reports

Change from Major to Area Source

- It is possible for a major source boiler to be re-designated as an area source boiler, and therefore subject to the less restrictive Area Source NESHAPS (6J).
- Must be accomplished prior to major source compliance date – January 31, 2016 (existing sources).
- Potential to emit HAPs would need to be < 10/25 TPY
- Even facilities that notified as major sources can become area sources for purposes of existing boiler rule applicability before January 31, 2016.

DOE Energy Assessment Webpage

An energy assessment is an evaluation of a company's energy use to identify the most cost-effective, energy saving-opportunities.

http://www1.eere.energy.gov/manufacturing/tech_deployment/energy_assessment.html

- Search recommendations from completed assessments to find energy-saving ideas.
- Obtain an assessment with assistance from DOE's Advanced Manufacturing Office (AMO). AMO offers assessments to demonstrate the effectiveness of a tool or protocol in identifying energy savings opportunities.
- Review the assessment process to prepare for and make the most of an assessment.
- Contact an Energy Expert or a Qualified Specialist in your area who applies DOE's software tools during assessments of energy systems.

Energy Assessment Tools

- EPA Boiler MACT (Major Source) Q&A document http://www.epa.gov/ttn/atw/boiler/boilermactqanda.pdf
- EPA – Boiler Emission Credits
  - http://www.epa.gov/ttn/atw/boiler/imptools/energycreditsmarch2013.pdf
- How do I find a Qualified Energy Assessor in New England?
  - http://www.epa.gov/boilercompliance/whereyoulive.html#region1

Energy Assessment Tools – DOE Programs

- DOE Boiler MACT Assistance Program
  - http://www1.eere.energy.gov/manufacturing/distributedenergy/boilermact.html
- DOE's Boiler MACT Technical Assistance Program
  http://www1.eere.energy.gov/manufacturing/tech_assistance/energy_assessment.html
- DOE's Boiler MACT & CHP Technical Assistance (Northeast)
  - http://www.northeastchptap.org/projectstartup/overview.php

and

For Additional Information

- Boiler compliance – Small Entity Compliance Guide
  http://www.epa.gov/ttn/atw/boiler/boilerpg.html
- To contact EPA assistance in your area of the country:
  http://www.epa.gov/boilercompliance/whereyoulive.html
- Patrick Bird (EPA R1) – 617-918-1287 bird.patrick@epa.gov
- Susan Lancey (EPA R1) – 617-918-1656 lancey.susan@epa.gov
- George Frantz (EPA R1)–617-918-1883 frantz.george@epa.gov
- Jim Eddinger (OAQPS) - 919-541-5426 eddinger.jim@epa.gov