Boiler MACT Webinar Q/A

Q: How much modification can be done to a boiler or process heater before it is considered to be "New?"

A: An existing boiler can be considered to be a "New" boiler if modifications costing up to 50% of a new boiler or process heater of the same size are made (including installation).

Q: What are the requirements for a boiler fueled by natural gas under the Boiler MACT Rule?

A: Under the Boiler MACT rule, facility's using natural gas boilers are only required to conduct tune-ups and a one-time Energy Assessment.

Q: What should I do if the operation of my CMS/DAS is delayed after the January 31, 2016 deadline?

A: Before the deadline, you should submit to your state air quality regulatory agency the following:

1) Reasons for the delay; and
2) How you are going to prove that your boiler is meeting some basic emission limits. This can be accomplished with a portable combustion analyzer measuring the boiler's CO, O_2, and NO_x emissions.

Q: What is a hybrid suspension grate boiler?

A: A hybrid suspension grate boiler is a boiler that is designed with air distribution to spread the fuel material over the entire width and depth of the boiler combustion zone. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler.

Q: Are railroad ties considered a Non-Hazardous Secondary Material (NHSM)?

A: As of now, all treated wood, including railroad ties, are not considered to be NHSM and **will not be permitted** to be burned in boilers after January 31, 2016.

Q: The Boiler Area Source and Boiler MACT rules state that Research and Development (R&D) boilers are exempt under the rules. Does this include boilers that support R&D facilities?

A: The Boiler Area Source and Boiler MACT rules define Research and Development boilers and process heaters as units that are specifically defined for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vehicles. This **does not include** units that solely or primarily provide heat or steam to a process at a research and development facility.

Q: What is the definition of a hot water boiler vs. a hot water heater?

A: A hot water heaters is a closed vessel with a capacity of no more than 120 gallons and a hot water boiler is a unit that combusts gaseous, liquid, or biomass fuel that does not generate steam. Hot water heaters with a capacity of no more than 120 U.S. gallons or a hot water boiler with a heat input of 1.6 MMBtu/hr or less are **NOT** subject to the Boiler Area Source or Boiler MACT rules. Any unit larger than these capacities would be considered to be a process heater that is regulated under the Boiler Area Source or Boiler MACT rules.

Q: What is an O_2 Trim System?

A: An O_2 Trim system is designed to continuously measure and maintain an optimum air-to-fuel ratio by maintaining excess air at a desired level.

Q: How and who do you submit an initial Notification of Compliance Status to?

A: A blank Notification of Compliance Status form can be found at the EPA's Boiler MACT website. This form includes directions indicating who and where the completed form should be sent to. Generally, all notifications should be sent to the EPA as well as the local state air regulatory agency.

Q: My facility operates several small existing boilers. If they add up to over the large limit, are we considered to be a Major or Area source?

A: The determination for whether your facility is considered to be an Area or Major Source depends on how many tons of hazardous air pollutants (HAPs) are emitted at the facility. If the facility as a whole emits 10 or more tons per year of any single HAP or 25 or more tons per year of any combination of HAPs, the facility is a Major Source. Facilities who emit less HAPs than these limits would be considered to be an Area Source.

Once this determination is made, work practices required by the regulations are followed on an individual basis for each boiler. For example tune-ups for small boilers (<10 MMBtu/hr) are required at less frequent intervals than tune-ups for large (≥10 MMBtu/hr) boilers.

Q: What does a tune-up and energy assessment consist of?

A: A tune-up is an inspection of the boiler system to ensure that the boiler is running as efficiently as possible. Tune-up requirements include inspecting the burner, inspecting the boiler's flame pattern, ensuring that the boiler control systems are working properly, and optimizing CO and O_2 emissions. Tune-ups must be conducted on a routine basis depending on the fuel type and size of the boiler.

An energy assessment is an overview of the facility's boiler plant and systems that use steam, hot water, heat, or electricity provided by the boiler in order to identify deficiencies

and potential energy savings. The Boiler Area Source and Boiler MACT regulations list specific requirements that must be completed for an energy assessment. The rules also require that the energy assessment must be completed by a qualified energy assessor.

Q: What is the definition of a "Limited-Use" boiler?

A: A limited-use boiler is a unit that burns any amount of solid or liquid fuel and has a federally enforceable average annual capacity factor of no more than 10%. This means that the boiler can be operated 10% of the time and 100% capacity, 100% of the time at 10% capacity, or any combination between.

Q: What are the requirements for other Gas 1 boilers other than units fired by natural gas?

A: The Boiler Area Source and Boiler MACT rules for gas-fired boilers are not specific to just natural gas boilers, but rather they include all boilers using a Gas 1 fuel, including natural gas, propane, and refinery gas. All Gas 1 boilers are exempt under the Boiler Area Source rule. If your facility falls under Boiler MACT, only the boiler tune-ups and a one-time energy assessment must be completed.

Q: If a boiler subject to the Boiler Area Source rule is a dual gas/oil unit where the liquid oil is only used one day a month, is the unit exempt from the Boiler Area Source Rule?

A: Not necessarily. Under the Boiler Area Source regulation, only Gas 1 boilers are exempt. A Gas 1 boiler is defined as a boiler that only burns natural gas, refinery gas, or other gas 1 fuel with the exception of liquid fuels burned during periods of gas curtailment, and supply emergencies or for period testing **not to exceed 48 hours in a calendar year**. A Notification of Alternative Fuel Use must be submitted within 48 hours of declaration between each period of curtailment.

If liquid fuel is burned outside of periods of gas curtailment, or for any reason other than periodic testing, the boiler would not fall under the Gas 1 subcategory and would instead be classified as a Liquid Fuel boiler.

Q: Would "startup" begin or end upon the generation of steam or heat?

A: Under the Boiler MACT Final Action on Reconsiderations of the Final Rule from January 21, 2015, "startup" is defined as the first-ever firing of fuel, or the firing of fuel after a shutdown event, in a boiler or process heater for the purpose of supplying useful thermal energy (such as steam or heat) for heating and/or producing electricity or for any other purpose. Startup ends when any of the useful thermal energy from the boiler or process heater is supplied for heating, producing electricity, or for any other purpose. Alternatively, startup can also be defined as the period with the first-ever firing of fuel or the firing of fuel after a shutdown event for the purpose of supplying useful thermal energy

for heating, cooling, or process purposes or for electricity, and ending four hours after the boiler or process heater supplies useful thermal energy for those purpose.

Under the Reconsideration Rule, "shutdown" is defined to begin when the boiler or process heater no longer supplies useful thermal energy for heating, cooling, or process purposes and/or generation of electricity, or when no fuel is being fed to the boiler or process heater, whichever is earlier.

Q: What forms should be used when conducting a tune-up on a Gas 1 Boiler?

A: The EPA does not currently have a specific tune-up form for facility regulated under the Boiler MACT rule. However, the tune-up form created for area sources found at http://www3.epa.gov/airtoxics/boiler/imptools/area_tuneup_info_only.docx can be modified to be used for Major Source facilities.

Q: Are any businesses exempt from the Boiler Area Source or Boiler MACT rules?

A: There are no specific businesses that are exempt under the Boiler Area Source or Boiler MACT rules. Different boiler types may be exempt under the rules (e.g. natural gas boilers are exempt under the Boiler Area Source rule), but all industrial, commercial, and institutional facilities are required to comply with the Boiler Area Source or Boiler MACT rules.

Q: If my facility is subject to Subpart JJJJJJ, does the Boiler MACT rule apply to a natural gas / fuel oil boiler?

A: 40 CFR Part 63, Subpart JJJJJJ is the Boiler Area Source Rule. Under this subpart, boilers that only burn Gas 1 fuels are exempt. However, if the unit burns #2 fuel oil outside of periods of natural gas curtailment, or for any reason other than periodic testing, then that boiler must comply with all Boiler Area Source requirements for biomass and oil boilers and process heaters.

Q: Is there a substantial fuel savings when installing an O_2 Trim system?

A: If the boiler is perfectly tuned, the air supply is correctly set, and the fuel type and spreading of fuel is correct, the overall fuel savings will be negligible. However, if the boiler's air supply settings are off, or if the fuel type (including moisture content and heat value) and the spreading and mixing of the fuel inside the combustion chamber is not optimal, then installing an O_2 Trim system can lead to substantial fuel savings.

Q: Are there initial Notification of Compliance Status requirements for small boilers with capacities of less than 10 MMBtu/hr?

A: Yes, all boilers must submit an initial Notification of Compliance Status except for Gas 1 boilers regulated under the Boiler Area Source rule and **NEW** large Gas 1 boilers or **NEW** small units and limited-use units regulated under the Boiler MACT rule.

Q: Are startup and shutdown procedures required for small boilers?

A: The Boiler Area Source rule only requires that the facility minimizes startup and shutdown periods and that they are conducted according to manufacturer's procedures.

The Boiler MACT rule requires that all facilities must keep records of the date, time, occurrence, and duration of each startup and shutdown as well as the type(s) and amount(s) of fuels used during each startup and shutdown. Additionally, specific startup and shutdown procedures must be followed for all boilers subject to emission limits in order to minimize emissions.

Q: Is it okay to start an energy assessment before the January 31, 2016 deadline and complete it in February?

A: The Boiler MACT rule states that an energy assessment must be completed by January 31, 2016.

Q: Are oxygen limitations a 30-day rolling average in all states?

A: If your facility is subject to emission limits under the Boiler MACT rule, exhaust oxygen content must be collected by your Continuous Monitoring System (CMS). This information should be used to calculate 30-day rolling averages. The facility must maintain 30-day rolling averages at or above the operating limits from the performance test. This is applicable to facilities in all states.

Q: Is there any significance to inspecting the color of the flame inside a boiler during a boiler tune-up?

A: The Boiler Area Source and Boiler MACT rules require that the boiler's flame pattern is inspected to ensure that it is consistent with manufacturer's specifications. This helps to ensure that the boiler is operating in an efficient manner and follows good work-practice requirements.

Q: Do boilers need to be stack tested for compliance with Mercury, Carbon Monoxide, Hydrochloric Acid, and Particulate Matter (or Total Selected Metals) by the January 31, 2016 deadline?

A: Existing boilers regulated under the Boiler MACT rule with emission limits must demonstrate initial compliance by July 29, 2016. New units must demonstrate initial compliance within 180 days of startup. These units must also demonstrate continuous compliance by conducting a stack test every year, no more than 13 months after the previous test.

All units subject to emission limits must test to Mercury, Hydrochloric Acid, Carbon Monoxide, and Particulate Matter or Total Selected Metals. The numerical limits for these emissions depend on the boiler subcategory.

Q: Are NO_x measurements required for natural gas boilers equipped with an O_2 Trim System?

A: Under the Boiler Area Source rule, all natural gas boilers are exempt from the rule and do not require tune-ups.

Under the Boiler MACT rule, natural gas units at a Major Source that are equipped with an O_2 Trim system require a tune-up every 5 years. For this tune-up, the facility must follow all tune-up requirements listed in the rule, including inspecting the burner, inspecting the boiler's flame pattern, evaluating all boiler controls, optimizing CO emissions, and measuring CO and O_2 emissions before and after the tune-up adjustments are made. The Rule does not specify any specific requirements for NO_x, but these readings are typically easy to obtain while conducting the tune-up and can help verify how efficiently the boiler is operating.

Q: Is the initial notification assumed to be met when the data is submitted through the EPA's online reporting tool?

A: For Area Sources, the Initial Notification of Applicability must be submitted to the EPA and the delegated state agency via standard mail. The initial Notification of Compliance Status must be submitted electronically through the Compliance and Emission Data Reporting Interface (CEDRI).

For Major Sources, both the Initial Notification of Applicability and the initial Notification of Compliance Status must be submitted to the EPA and delegated state agency via standard mail.

Q: If I missed the deadline for submitting a notification, is it recommended to submit the notification after the deadline date?

A: Yes, it is recommended that all notifications are submitted as soon as possible.

Q: Does the Boiler MACT rule state that I must record the amount of natural gas my gas-fired boiler burns during startup?

Yes, the Boiler MACT rule requires that all facilities maintain records of the calendar date, time, occurrence and duration of each startup and shutdown. Additionally, all facilities must maintain record of the type(s) and amount(s) of fuels used during each startup and shutdown.

Q: What is the significance of a facility's combined heat input if we operate several large boilers?

A: Nothing specifically. The determination for whether your facility is considered to be an Area or Major Source depends on how many tons of hazardous air pollutants (HAPs) are emitted at the facility. If the facility as a whole emits 10 or more tons per year of any single HAP or 25 or more tons per year of any combination of HAPs, the facility is a Major Source. Facilities who emit less HAPs than these limits would be considered to be an Area Source.

Once this determination is made, work practices required by the regulations are followed on an individual basis for each boiler. For example tune-ups for small boilers (<10 MMBtu/hr) are required at less frequent intervals than tune-ups for large (≥10 MMBtu/hr) boilers.