

Area Source Boiler Rule Online Training

Module: Existing Large Industrial, Commercial, or Institutional Boilers

NESHAP 40 CFR Part 63 Subpart JJJJJ, henceforth referred to as the “rule”

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Welcome to the training module for existing, large boilers greater than or equal to 10 million Btu per hour heat input! This training program will provide you with an overview of requirements tailored to your specific boiler category. As stated in the introduction, the information provided is based on the most recent version of the rule.

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Before doing anything you need to notify someone that your boiler is an affected source. The rule requires that all owners or operators of a boiler submit an Initial Notification of Applicability to the delegated authority. Currently, the U.S. Environmental Protection Agency or EPA is the delegated authority for Connecticut sources; therefore, all Initial Notifications need to be submitted to EPA Region 1. If the boiler is located at a Title V operating permitted source, then the initial notification should also be submitted to the Connecticut Department of Energy and Environmental Protection. The Initial Notification is a one-time submittal which should include:

- The name and address of the owner or operator
- The address at which the affected source is located
- Identification of the relevant standard, or other requirement, that is the basis of the notification
- Anticipated compliance date with the standard
- A brief description of the nature, size, design and method of operation of the source, and an identification of the types of emission points within the affected source subject to the standard and types of hazardous air pollutants emitted
- A statement that the affected source is an area source.

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As the owner or operator of an existing large biomass- or oil-fired boiler, you are not subject to any numeric emission limits, which means you are not required to conduct any performance tests or continuous monitoring. You are, however, required to perform biennial tune-ups on the boiler. For an existing large boiler, the first biennial tune-up must be performed before March 21st, 2014. Subsequent tune-ups must be conducted no more than 25 months after the previous tune-up.

All existing large boilers, except limited use boilers, must conduct a one-time energy assessment performed by a qualified energy assessor.

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There is the possibility that you may only need to tune-up your boiler every five years if it meets one of the following criteria:

- The boiler qualifies as a seasonal or limited use boiler
- The boiler is equipped with an oxygen trim system that maintains an optimum air-to-fuel ratio.

Your boiler qualifies as a seasonal boiler if it is biomass or oil-fired and undergoes a shutdown period of at least seven consecutive months (or 210 consecutive days) each 12-month period due to seasonal conditions.

Your boiler qualifies as a limited-use boiler if it burns any amount of solid or liquid fuels and has a federally enforceable average annual capacity factor of no more than 10 percent.

If your existing large boiler meets one of these criteria, then the first tune-up must be performed by March 21st, 2014. Subsequent tune-ups must be conducted no more than 61 months after the previous tune-up.

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In order to meet the work practice requirements of the rule, the individual performing the tune-up must perform or complete the following:

- Inspect, clean and or replace any burner components as needed. This inspection may be delayed until your next scheduled boiler shutdown, but you must inspect each burner at least once every 36 months for boilers subject to biennial tune-ups and at least once every 72 months for boilers subject to 5-year tune-ups.
- Inspect and adjust the burner to optimize the flame pattern, if necessary. Adjustments should be consistent with the manufacturer's specifications, if available.
- Inspect and calibrate, if necessary, the system controlling the air-to-fuel ratio to ensure that it is correctly calibrated and functioning properly. This inspection can also be delayed until your next scheduled boiler shutdown as long as it is inspected at least once every 36 or 72 months depending upon your tune-up frequency.
- Optimize the total emissions of carbon monoxide consistent with the manufacturer's specifications and with any nitrogen oxide requirement the unit is subject to.
- Measure the carbon monoxide and oxygen concentrations in the effluent stream before and after the tune adjustments are made. Measurements must be reported in parts per million for carbon monoxide and percent by volume for oxygen. Measurements may be taken using a portable carbon monoxide analyzer.

If the unit is not operating on the required tune-up date, the tune-up should be conducted within 30 days of startup.

Additionally, the tune-up must be conducted while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up.

If you'd like more information regarding tune-up procedures, please refer to EPA's **Boiler Compliance at Area Sources** webpage for guidance on tune-up procedures.

Keep in mind that all boiler adjustments and modifications must be completed by qualified, experienced technicians, whether employed by you or a third party.

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Once the tune-up is complete, documentation of the tune-up must be retained on site. A report for the tune-up must include the following:

- The concentrations of carbon monoxide and oxygen, measured at high fire or typical operating load, for before and after the tune-up.
- A description of any corrective actions taken as part of the tune-up
- The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period.

Units sharing a fuel meter may estimate the fuel use by each unit.

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All existing large boilers, except limited-use boilers, must conduct a one-time energy assessment performed by a qualified energy assessor. If you have completed an energy assessment on or after January 1st, 2008 that meets, or is amended to meet, the energy assessment requirements of the rule, then you have satisfied the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement.

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The energy assessment must include:

A visual inspection of the boiler system to identify any cracks, leaks or corrosion

An evaluation of operating characteristics of the affected boiler systems, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints.

An inventory of major energy use systems consuming energy from the affected boilers which are under control of the boiler owner or operator.

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A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.

A list of major energy conservation measures that are within the facility's control.

A list of the energy savings potential of the energy conservation measures identified.

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

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The energy assessment needs to evaluate both the boiler systems and, in certain circumstances, the associated energy use systems. To determine whether your assessment must evaluate energy use systems, see the definition of "Energy assessment" in section 63.11237 of the rule.

Associated components of the boiler include but are not limited to: the feedwater systems, combustion air systems, fuel systems (including burners), blowdown systems, combustion control systems, steam systems, and condensate return systems, directly connected to and serving the energy use systems.

Energy use systems are located on the site of the affected boiler and use energy provided by the boiler.

These systems include:

- process heating; compressed air systems; machine drive (such as motors, pumps, and fans); process cooling; facility heating, ventilation, and air-conditioning systems; hot heater systems; building envelope; and lighting; or
- other systems that use steam, hot water, process heat, or electricity, provided by the boiler.

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The energy assessment needs to be conducted by a qualified energy assessor. You are probably asking yourself, “What is a qualified energy assessor?” and “How do I find one?”

A “qualified energy assessor” is defined in Section 63.11237 of the rule, but basically it is an individual that needs to have the background, experience, and expertise to evaluate energy savings opportunities for the types of boiler and/or energy use systems located at a particular facility. The energy assessor may either be a company employee or an outside specialist. For more complicated boiler or energy use systems or facilities with multiple boilers, a group, such as a consulting firm or a company’s engineering staff, with the needed expertise could perform the required engineering assessment.

EPA Region 1 has a list of qualified energy assessors that have asked to be listed on their website. There is no certification process to get on the list nor does EPA endorse any individual appearing on the list.

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Besides the records of the boiler tune-up, what other records do you need to keep? The owner or operator is required to keep copies of the following:

- Each notification and report, and all supporting documentation
- Records to document conformance with the required work practices
- 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, including corrective actions to restore the boiler, air pollution control, or monitoring equipment to its normal manner of operation
- For each boiler that meets the seasonal boiler definition, records of days of operation per year
- For each boiler that meets the limited-used boiler definition, a copy of the federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent and records of fuel use for the days the boiler operated

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Your records must be readily available for review. All records must be kept for five years after the date of the recorded action. Each record must be on site or accessible from a central location by computer or other means of

instant access at the site for two years after the recorded action. For the remaining three years, the records may be kept off-site.

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Besides the initial notification there are some additional notifications and reports that you may need to prepare and submit to stay in compliance. You may need to prepare and submit the following:

A notification of compliance status, a compliance certification report, a notification of fuel switch, a notification of a physical change to your boiler, a notification of obtaining permit limits that may affect the boiler's applicability to the rule, and a notification of commencing combustion of solid waste.

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A notice certifying your compliance with the rule requirements is required. This report is called a notification of compliance status report. Since your boiler is not subject to any emission limits you only need to certify compliance with the tune up and energy assessment requirements. The notification must be submitted electronically using the Compliance and Emissions Data Reporting Interface, or CEDRI, on EPA's Central Data Exchange at www.epa.gov/cdx.

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For existing large boilers that are required only to conduct a biennial or 5-year tune-up and are not subject to emission or operating limits, you may prepare only a biennial or 5-year Compliance Certification Report. Reports should be prepared by March 1 of the year after the calendar year during which a tune-up is completed. The report must contain:

The company name and address.

A statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification, and a statement of whether the source has complied with all the relevant standards and other requirements of the rule as required. The notification must include the applicable certifications of compliance, as provided in the rule and be signed by a responsible official.

This report is not required to be submitted, but can be requested by the delegated authority.

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There may be a time when changes are made to your boiler that may require a notification to the delegated authority.

If you intend to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste.

If you have switched fuels or made a physical change to the boiler and the fuel switch or change resulted in the applicability of a different subcategory within the rule, in the boiler becoming subject to the rule, or in the boiler switching out of the rule due to a change to 100 percent natural gas, or you have taken a permit limit that resulted in you being subject to the rule, you must provide notice of the date upon which you switched fuels, made the physical change, or took a permit limit within 30 days of the change.

Each notification requires specific information about the changes being made. Please refer to the rule for more details.

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If you need to send a paper submission for any of the notifications or reports to EPA Region 1, please use the address listed here. If your boiler is located at a Title V source, a copy should also be submitted to the Connecticut Department of Energy and Environmental Protection at 79 Elm Street, Hartford, Connecticut, 06106.

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You may find more information on EPA's **Boiler Compliance at Area Sources** webpage found at:
[epa.gov/ boilercompliance](http://epa.gov/boilercompliance)

Some of the information you will find includes: brochures, fact sheets, example notifications, regulations, and more.

Additionally, the **Small Entity Compliance Guide for Area Source Boilers** is available on EPA's Boiler Compliance at Area Sources webpage and is a resource that will help you determine if and how your boiler is affected by the rule.

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If you have any further questions, feel free to contact either the Air Toxics Coordinator at **EPA Region One** or the Compliance Analysis and Coordination Unit at the Connecticut Department of Energy and Environmental Protection.

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What should you take away from this module?

- **Existing large oil and biomass boilers have no emission limits**
- **You are required to perform a one-time energy assessment**
- You're required to perform a **tune-up by March 21st, 2014 and then every other year or every 5 years**
- **You are required to reach compliance by the applicable due dates**

You are required to maintain records and all supporting documents for at least **5 years**:

You're required to:

- Submit an Initial notification and
- Submit a Notification of Compliance Status to EPA. The Notification of Compliance Status must also be sent to the State of Connecticut Department of Energy and Environmental Protection if you are a Title V operating permitted source. Submit the Notification of Compliance Status for tune-ups electronically if you haven't already submitted it.
- **Prepare and keep a Compliance Certification Report** for tune-ups.
- And if applicable, submit a Notification if switching fuel type, making a physical change, or commencing combustion of solid waste

Please remember, this training module is intended to provide an overview of your requirements under this rule. To ensure that all requirements are met, please read the full rule.