

DOT Office of Stewardship and Compliance

New Federal Boiler Rule Requirements

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Presentation Overview

- **Boiler Regulations**
 - What the rules require and why
 - How does this specifically apply to DoT?
 - Tune up requirements
 - Forms – What is required, when are they due
- **Solid Waste Definition – Used oil**
- **Questions throughout the presentation**

Overview of recent EPA actions affecting boilers

EPA issued three rules that reduce emissions of HAPs:

- NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD) ("Boiler MACT")
- NESHAP for Area Sources: Industrial, Commercial, and Institutional Boilers (40 CFR 63, Subpart JJJJJJ) ("Boiler Area Source Rule")
- Section 129 NSPS and Emission Guidelines for Commercial and Industrial Solid Waste Incinerators (40 CFR 60, Subpart CCCC and DDDD) ("CISWI")

EPA also issued a final rule that defines "solid waste"

- Necessary to determine whether a source must meet boiler standards or an incinerator standard

Schedule of Events

- **Schedule**
 - Proposals signed on April 29, 2010
 - Published in the **Federal Register** on **June 4, 2010**
 - Promulgations signed on February 21, 2011 (Court-ordered)
 - Published in the **Federal Register** on **March 21, 2011**
 - Effective Date: May 20, 2011
- **EPA has initiated reconsideration of certain aspects of the boiler and CISWI rules**
 - Some of the comments raise difficult technical issues that would benefit from additional public involvement.
 - Stakeholders have petitioned for reconsideration of other issues.
- **Stay**
 - On May 18, 2011, EPA delayed the effective date of the Boiler MACT and CISWI

Schedule of Events (cont.)

- **Boiler Area Source Rule and Solid Waste Definition are in effect even during the reconsideration process for the boiler and incinerator regulations.**
 - Facilities need to comply with rules as they were promulgated.
- **June 24, 2011 EPA announced a timeline for re-proposal**
 - Ensure standards are based on the best available data
 - Ensure public is given ample opportunity to provide additional input
 - Re-propose end of October 2011 (changed to end of November, 2011)
 - Finalize end of April 2012 (unsure if this date will change)

What does this mean for DoT?

- **Uncertainty for all boiler owners and operators**
 - What parts of the rule will still apply?
 - What parts will change?
 - Will the applicability of the rule remain the same?
 - Compliance with existing rule while proposed rule is being changed.
- **Uncertainty for NHDES**
 - Federal rule for which NHDES is delegated authority over large permitted facilities only
 - Providing information through outreach (presentations, website) that may change
 - Implementation questions – some have been answered by EPA, others will be during reconsideration, others may not

Boiler Area Source Rule

- Rule is broken down based on:
- **Boiler size:**
 - Small (<10 MMBtu/hr)
 - Large (≥10 MMBtu/hr)
- **Fuel type:**
 - Coal-fired units
 - Biomass-fired units
 - Oil-fired units
- **Boiler Construction:**
 - Existing prior to June 4, 2010
 - New or reconstructed after June 4, 2010

Definition of a Boiler

- **Boiler** means an enclosed device using controlled flame combustion in which **water** is heated to recover thermal energy in the form of steam or hot water.
- This means it excludes devices that heat **air** for space heat.

Are any boilers not subject to this subpart?

- Any boiler covered by another part of 40 CFR 63
- Any boiler covered by CISWI
- Hazardous waste boilers
- A boiler that is used specifically for research and development.
 - This exemption does not include boilers that solely or primarily provide steam (or heat) to a process or for heating at a research and development facility.
- Any boiler that is used as a control device to comply with another Subpart of 40 CFR 63, provided that at least 50 percent of the heat input to the boiler is provided by the gas stream that is regulated under another subpart.

Are any boilers not subject to this subpart? (continued)

- A gas-fired boiler as defined in this subpart.
 - **Gas-fired boiler** includes any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.
- A hot water heater as defined in this subpart.
 - **Hot water heater** means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous or liquid fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, ... and ... water temperatures exceeding 210 °F.

Area Source Requirements – Oil and Biomass Units Only Industrial, Commercial, and Institutional Boilers 40 CFR Part 63, Subpart JJJJJJ

Do the Emission Limits Requirements Apply?

	Existing Oil Units	New Oil Units	Existing Biomass Units	New Biomass Units
≥ 10 MM Btu/hr	No	Yes	No	Yes
< 10 MM Btu/hr	No	No	No	No

Do I do a One-Time Energy Assessment?

	Existing Oil Units	New Oil Units	Existing Biomass Units	New Biomass Units
≥ 10 MM Btu/hr	Yes	No	Yes	No
< 10 MM Btu/hr	No	No	No	No

Do I do a Biennial (every other year) Tune-Up?

	Existing Oil Units	New Oil Units	Existing Biomass Units	New Biomass Units
≥ 10 MM Btu/hr	Yes	Yes	Yes	Yes
< 10 MM Btu/hr	Yes	Yes	Yes	Yes

Tune-up Requirement [63.11223(b)]

- As applicable, **inspect the burner**, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 36 months).
- **Inspect the flame pattern**, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
- **Inspect the system controlling the air-to-fuel ratio**, as applicable, and ensure that it is correctly calibrated and functioning properly.
- **Optimize total emissions of carbon monoxide**. This optimization should be consistent with the manufacturer's specifications, if available.

Tune-up Requirement [63.11223(b)] (continued)

- Measure the concentrations in the effluent stream of **carbon monoxide** in parts per million, by volume, and **oxygen** in volume percent, **before and after the adjustments** are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made).
- Maintain onsite and submit, if requested, **biennial report** containing the following information:
 - The concentration of CO in the effluent stream in ppm, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler.
 - A description of any corrective actions taken as a part of the tune-up of the boiler.
 - The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler.
- If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.

Notification and Reporting Guidance

- Sample Initial Notifications, Notifications of Compliance Status, and Tune-up Guidance and Example Recordkeeping Forms for Area Sources can be found under "Implementation Tools" at EPA's website: <http://www.epa.gov/boilercompliance/>
- NHDES also has a website with sample forms and guidance documents: <http://des.nh.gov/organization/divisions/air/boiler-rule/index.htm>

Notification and Reporting Guidance

- Send copies of **all** paperwork to
EPA Region 1 US Environmental Protection Agency
5 Post Office Square, Suite 100, Mail code: OES04-2,
Boston MA 02109-3912
Attention: Air Clerk
- and in the case of NH sources, the initial notification should be sent to:
New Hampshire Department of Environmental Services
Air Resources Division
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095
Attention: Section Supervisor, Compliance Bureau
- NH permitted sources should send all paperwork to EPA & NHDES.

Tune-up Information for Boilers

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

You may use this form to meet the requirements for completing and documenting a tune-up under the National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers. However, you may also record the information in another form or format.

SECTION I: RECORD OF GENERAL BOILER INFORMATION

Date: _____ Reporting Period: _____
Boiler Operator: _____ Boiler Emission Unit ID*: _____
Tune-Up Conducted By: _____ Phase: _____

SECTION II: RECORD OF TUNE-UP PROCEDURES (63.11225(c)(2) and (63.11223(b)(6) and (7))

Check the applicable box when the procedure is completed. If the procedure does not apply to you, indicate "not applicable" or "NA" in the comments column.

Requirement	Description	Inspector Comments/Corrective Actions Taken												
<input type="checkbox"/>	Inspect the burner ¹	Check or replace any components of the burner, as necessary.												
<input type="checkbox"/>	Inspect the flame pattern	Adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.												
<input type="checkbox"/>	Inspect air/fuel ratio control system	Ensure system is maintained and functioning properly, if such a system is installed on the boiler.												
<input type="checkbox"/>	Optimize emissions of carbon monoxide (CO)	Optimize emissions consistent with the manufacturer's specifications, if available.												
<input type="checkbox"/>	Measure CO and O ₂ levels in exhaust, before and after tune-up ²	<table border="1"> <thead> <tr> <th>Parameter</th> <th>Before</th> <th>After</th> </tr> </thead> <tbody> <tr> <td>CO (ppm)</td> <td></td> <td></td> </tr> <tr> <td>O₂ (vol %)</td> <td></td> <td></td> </tr> <tr> <td>O₂ (dry vol %)</td> <td></td> <td></td> </tr> </tbody> </table>	Parameter	Before	After	CO (ppm)			O ₂ (vol %)			O ₂ (dry vol %)		
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CO (ppm)														
O ₂ (vol %)														
O ₂ (dry vol %)														

*The boiler emission unit ID corresponds to the ID provided on the manufacturer's label.
¹You may only measure the burner and the fuel inlet and outlet, but you must inspect each burner at least once every 36 months.
²Measurements must be made on either a wet or wet basis, as long as it is the same basis before and after the tune-up adjustments are made. CO concentration measurements must be made in units of parts per million by volume (ppm), Oxygen (O₂) concentration measurements must be made as a percentage.

SECTION III: RECORD OF MANUFACTURER SPECIFICATIONS (63.11225(c)(2))

If your boiler has manufacturer specifications for adjusting the flame patterns or optimizing total emissions of carbon monoxide, maintain a copy of these specifications in your records.

SECTION IV: RECORD OF FUEL TYPE (63.11223(b)(6)(iii))

Fuel Type*	Amount of fuel used or delivered for the 12 months ¹ preceding the tune-up ²												Units of measure ³
	Delivery Date	Example: 5/20/2011											
	Or Period of Consumption	Example: 5/20/2011 - 8/31/2011											

[Add rows to the table for additional fuels, as necessary.]

STOP If you have more than one boiler that must conduct a tune-up, please repeat Sections I, II, and III for each boiler. Otherwise, proceed to Section IV below. Keep Sections II through IV in your records for 5 years. You do not submit this information unless requested by your delegated authority.

¹ Report all fuels used in each of the units subject to the standard (e.g., #6 fuel oil, #2 fuel oil, waste oil, etc.). See the definition of fuel type in 63.11223.
² For the first tune-up, this fuel consumption record begins on May 20, 2011, the effective date of the rule. Thus, the first tune-up record will not reflect an entire 12 months of consumption data.
³ EPA recognizes that not all facilities have fueling capabilities. Records of fuel delivery instead of fuel consumption will also meet the rule requirements. Affected sources have discretion on the periods of fuel records maintained onsite. The records may be annual, monthly, or periodic, depending on fuel delivery frequencies.
* e.g., Gallons

SECTION IV: FACILITY INFORMATION AND CERTIFICATION (63.11225(b)(1) and (2))

Facility Name: _____

Facility Street Address: _____

City: _____ State: _____ Zip: _____

I certify that my facility has complied with the tune-up requirement for boiler(s) per 63.11123 of 40 CFR part 63, subpart JJJJJ.

Name (please print) _____ Title _____

Phone Number _____ Email Address _____

Signature _____ Date: _____

The required **initial** tune-up is due by (63.11196):

- Existing Sources:** No later than March 21, 2012.
- New Sources:** No later than May 20, 2011 or upon start-up of the boiler, whichever is later.

If the unit is not operating on the required date for a tune-up (because it is a seasonal boiler, or because it is down for maintenance, for example), the tune-up must be conducted within one week of startup (63.11223(b)(7)).

Subsequent tune-ups:

Each subsequent biennial tune-up must be conducted no more than 25 months after the previous tune-up (63.11223(a)) and you must prepare a biennial compliance certification that indicates you complied with all the relevant standards and requirements of this subpart. You do not need to submit this report, but it can be requested by your delegated authority (63.11225(b)).

**Notification of Compliance Status
for Boilers Subject to Tune-ups**

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

You may use this form to meet the one-time Notification of Compliance Status requirement for a boiler(s) that is subject to a tune-up work practice under the National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers. However, you may report the information in another form or format.

SECTION I: INSTRUCTIONS

If your boiler is not subject to a tune-up work practice, do not use this example form. There is a separate Notification of Compliance Status form for boilers that are not subject to a tune-up work practice. See www.epa.gov/region1/air/boiler/boiler_nocsi.html for additional information.

This report is due (603.11225(a)(4)):

Existing Sources: Must be submitted no later than July 19, 2012.
New Sources: Must be submitted by no later than September 17, 2011 or 120 days after startup, whichever is later.

SECTION II: CERTIFICATION AND NOTIFICATION OF COMPLIANCE STATUS UNDER THE BOILERS AREA SOURCE REGIME (603.11225(a)(4))

Check all applicable boxes

This facility complies with the requirements of 603.11214 to conduct an initial tune-up of each boiler.

No secondary materials that are solid waste were combusted in any affected unit.¹

Select one of the following options:

This facility has had an energy assessment performed according to 603.11214(i).²

I will submit a separate compliance status notification for the energy assessment by July 19, 2014.

The energy assessment does not apply to my facility.

¹ This facility has submitted to a secondary materials assessment as described in section 112.11(f) of the Clean Air Act and you are not asked to track this data.
² Facilities until July 19, 2014 do not have to complete an energy assessment. Facilities that are required to complete an energy assessment by July 19, 2014 are required to complete an energy assessment by July 19, 2014. The facility completed an energy assessment for one boiler. I did not have the requirement to have a separate notification for each boiler. The form was submitted to the manufacturer for the energy assessment and you have the option to certify compliance in this form instead of submitting a later date. If compliance is required by July 19, 2014, you must submit a separate notification for each boiler. I did not have the requirement to have a separate notification for each boiler.

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SECTION III: FACILITY INFORMATION (603.9(h)(2))

I certify that the information presented herein is true, accurate, and complete to the best of my knowledge. (See 63.9(h)(2)(i)).

Facility Name: _____

Facility Street Address: _____

(City) _____ (State) _____ (Zip) _____

Name (please print) _____

Signature _____ DATE: _____

Submit this notification form to:

EPA Region 1
5 Post Office Square, Suite 100, Mail code: OES04-2,
Boston MA 02109-3912 Attention: Air Clerk

New Hampshire Department of Environmental Services
Air Resources Division
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095 Attention: Air Permitting

Permitting Guidance

- NH Permit Applicability

Device	Design gross heat input (BTU/hr)	Fuel
External Combustion Device (Boiler)	≥10,000,000	Gaseous fuel, LPG, distillate fuel (#2 fuel oil) or diesel fuel, any combination
	≥4,000,000	#4 fuel oil
	≥2,000,000	Solid fuel, residual fuel (#6 fuel oil), used oil, any combination

Used Oil and the Definition of Solid Waste

- Solid Waste Definition defines traditional fuels such as natural gas, coal, biomass, oil.
- Traditional fuels include on-specification used oil.
- Traditional fuels can be used in devices that would be regulated under the boiler rules.
- Off-specification used oil could change this applicability.
- NHDES-ARD recommendation would be to have a representative sample or samples of used oil tested with the results kept on file.

Questions?

Contact:
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Air Resources Division
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(603) 271-2822