

Update on EPA's Boiler MACT Rules and Associated Rules

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Boiler MACT History

- 40 CFR, Part 63, Subpart DDDDD
National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Industrial, Commercial, and Institutional Boilers and Process Heaters (MACT Subpart DDDDD) was originally promulgated on September 13, 2004. (Section 112 of CAA)
- 40 CFR, Part 60, Subpart CCCC
New Source Performance Standards (NSPS) and emission guidelines for Commercial and Industrial Solid Waste Incineration (CISWI) Units originally promulgated in 2000.
(Section 129 of CAA)
- June 8, 2007 DC Circuit Court of Appeals vacated the 2004 Boiler MACT Rule, just months before the rule's compliance date of September 13, 2007. Circuit Court remanded CISWI rules.
- Court order required EPA to propose new rules by April 29, 2010 and to complete a final rule by December 16, 2010.

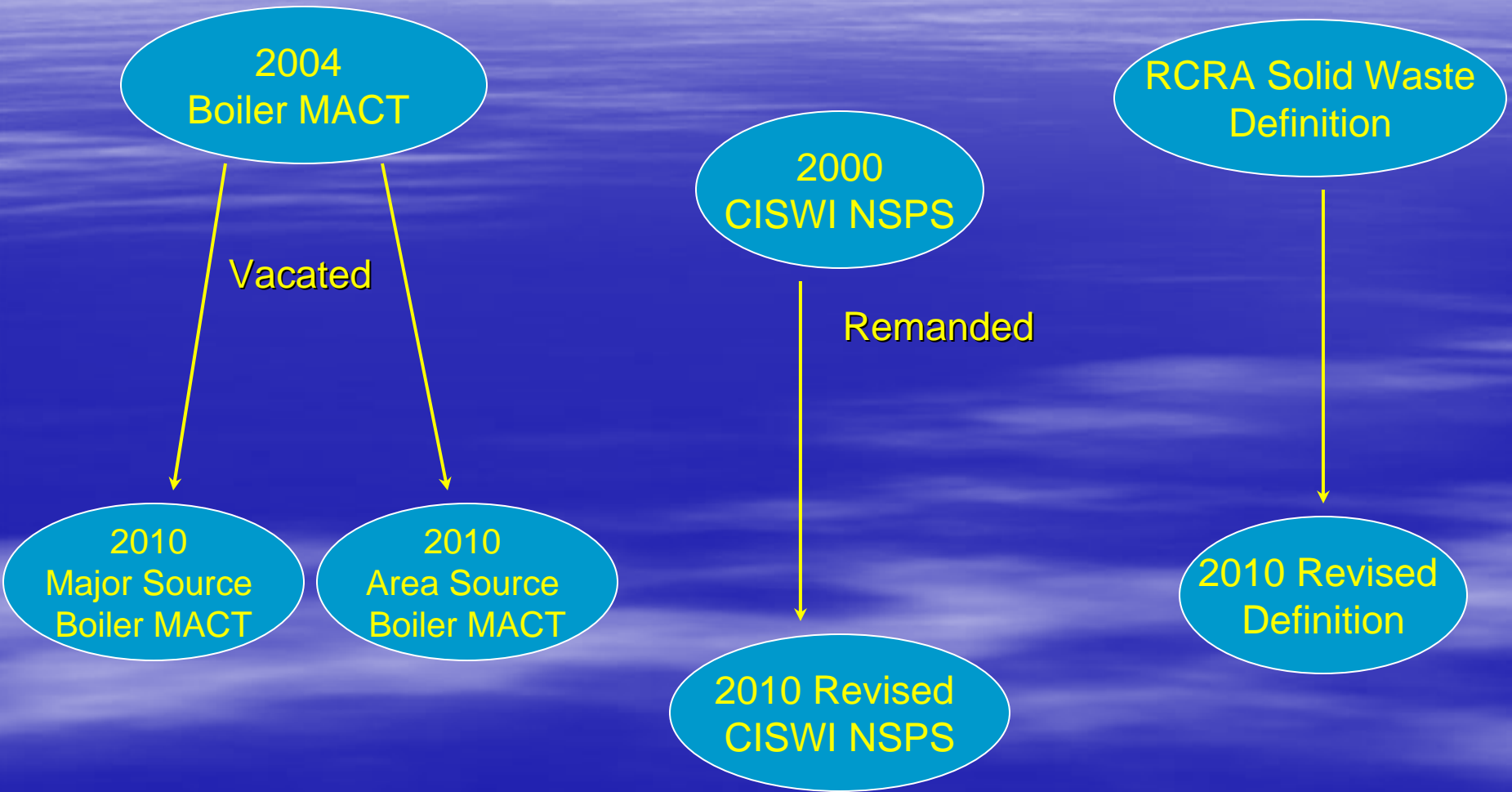
3 Proposed Rules Published on June 4, 2010

- 1) 40 CFR, Part 63, Subpart DDDDD, NESHAPS for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Source Facilities (Boiler MACT Major Sources),
- 2) 40 CFR, Part 63, Subpart JJJJJJ, NESHAPS for Industrial, Commercial, and Institutional Boilers at Area Source Facilities (Boiler MACT Area Sources), and
- 3) Proposed amendments to 40 CFR, Part 60, Subpart CCCC, NSPS and emission guidelines for Commercial and Industrial Solid Waste Incineration (CISWI) Units.

Resource Conservation & Recovery Act

- Additionally, in June of 2010 EPA proposed an updated definition of nonhazardous solid waste under Subtitle D of RCRA. The new definition clarifies which secondary materials are solid wastes when burned in combustion units. It includes consumer and industrial materials that are no longer used for their original purpose, such as: scrap tires, off-spec used oil, coal refuse, and construction and demolition debris.
- The new definition will potentially affect some units currently considered boilers by moving them into the category of commercial and industrial solid waste incinerators if they burn solid waste.
- Public comment period on the proposed RCRA rules closes on August 3, 2010.

Solid Waste Combustion Summary



Boiler MACT Major Source Facilities

- 40 CFR, Part 63, Subpart DDDDD, NESHAPS for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Source Facilities (Boiler MACT Major Sources)
- Major source facilities – emit or have the potential to emit 10 or more tons per year (tpy) of any single HAP or 25 tpy of any combination of HAPS.

Boiler MACT Major Source Facilities

- 1) Boilers that burn natural gas, fuel oil, coal, biomass (e.g. wood), refinery gas, or other gas to produce steam. The steam is used to produce electricity or provide heat.
- 2) Process heaters that heat raw or intermediate materials during an industrial process.

Boiler MACT Major Source Facilities

- 1 Pulverized coal units
- 2 Stoker designed to burn coal
- 3 Fluidized bed units designed to burn coal
- 4 Stokers designed to burn biomass
- 5 Fluidized bed units designed to burn biomass
- 6 Suspension burners/Dutch ovens designed to burn biomass
- 7 Fuel cells designed to burn biomass
- 8 Units designed to burn liquid fuel
- 9 Units designed to burn natural gas/refinery gas
- 10 Units designed to burn other gases, and
- 11 Metal process furnaces

Boiler MACT Major Source Facilities

Summary of Requirements

New & Existing natural gas and refinery gas units

- Work practice standards instead of emission limits.
- Annual tune-up for each unit performed by operator.

Boiler MACT Major Source Facilities

Summary of Requirements

Existing units with a heat input capacity < 10 million British thermal units per hour (MMBtu/hr)

- Work practice standards instead of emission limits.
- Tune-up for each unit once every 2 years performed by operator.

Boiler MACT Major Source Facilities

Summary of Requirements

All other existing and new boilers and process heaters located at major sources will have to meet emission limits for :

- Mercury
- Dioxin
- Particulate matter (PM) (as a surrogate for non-mercury metals)
- Hydrogen chloride (HCl) (as a surrogate for acid gases)
- Carbon monoxide (CO) (as a surrogate for non-dioxin organic air toxics)

Existing major source facilities will also be required to conduct an energy assessment.

Boiler MACT Major Source Facilities

Summary of Requirements

Testing

- Initial compliance tests (PM, HCl, Mercury, CO, and Dioxin/Furans)
- Annual performance tests
- Annual tune-up for units < 10 MMBtu/hour in size and units in Gas 1 and Metal Process Furnaces subcategories

Monitoring

- CO & O₂ CEMS for units with heat input capacity \geq 100 MMBtu/hour
- PM CEMS for units combusting coal, biomass, or residual oil and having a heat input capacity \geq 250 MMBtu/hour
- Opacity COMS if opacity limit
- Process parameters (opacity, pressure drop, sorbent injection rate, fuel, etc.)

Continuous Compliance

- Demonstrated by maintaining operating limits (process parameters)
- Demonstrated by maintaining CEMS values (30-day average) below emission limits

Boiler MACT Area Source Facilities

- 40 CFR, Part 63, Subpart JJJJJJ, NESHAPS for Industrial, Commercial and Institutional Boilers at Area Source Facilities (Boiler MACT Area Sources)
- Section 63.2 Area Source – any stationary source of HAPs that is not a major source
- Note – does not include process heaters
- Will not regulate boilers that burn only natural gas

Boiler MACT Area Source Facilities

- Area source boilers have different emission limits and other requirements based on the type of fuel burned - coal, oil or biomass, and the boiler's size.
- Large boilers have a heat input capacity ≥ 10 MMBtu/hr
- Small boilers have a heat input capacity < 10 MMBtu/hr

Boiler MACT Area Source Facilities

Summary of Requirements

New Boilers

- Coal-fired units will be required to meet emission limits for Mercury, PM and CO
 - (Mercury and CO limits based on MACT)
 - (PM limit based on Generally Available Control Technology (GACT))

- Biomass and oil-fired units would need to meet limits for PM and CO
 - (CO limit based on MACT)
 - (PM limit based on GACT)

Boiler MACT Area Source Facilities

Summary of Requirements

Existing Large Boilers (≥ 10 MMBtu/hr)

- Coal-fired units will be required to meet emission limits for Mercury and CO (based on MACT)
- Biomass and oil-fired units would need to meet limits for CO (based on MACT)
- All area source facilities with large boilers will be required to conduct an energy assessment.

Boiler MACT Area Source Facilities

Summary of Requirements

Existing Small Boilers (< 10 MMBtu/hr)

- No emission limits
- Work practice standard is a biennial boiler tune-up
- Exempts most area source boilers from Title V permit requirements

Boiler MACT Area Source Facilities

Summary of Requirements

Testing

- Initial compliance tests depends on size and age (PM, Mercury, and CO)
- Annual performance tests
- Biennial tune-up for boilers < 10 MMBtu/hour

Monitoring

- Process parameters (opacity, pressure drop, sorbent injection rate, fuel, etc.)
- CO & O₂ CEMS for units with heat input capacity \geq 100 MMBtu/hour

Continuous Compliance

- Demonstrated by maintaining operating limits (process parameters)
- Based on averages set during compliance test

CISWI Revisions

- Proposed amendments to 40 CFR, Part 60, Subpart CCCC, (NSPS) and emission guidelines for Commercial and Industrial Solid Waste Incineration (CISWI) Units.
- CISWI unit - any distinct operating unit at a commercial or industrial facility used to burn solid waste as defined in Subtitle D of RCRA. This rule does not include municipal solid waste incinerators, hazardous waste incinerators, sewage treatment plant incinerators or sewage sludge incinerators, which are covered under separate rules.

CISWI Revisions

Incinerators were the only subcategory covered in the 2000 rule. The revised rule will cover five CISWI subcategories:

- Incinerators
- Energy recovery units
- Waste burning kilns
- Burn-off ovens, and
- Small, remote incinerators

CISWI Revisions

Proposed rule will establish emission limits for the following pollutants emitted from CISWI units (based on subcategories):

- Mercury
- Lead
- Cadmium
- Hydrogen Chloride
- Particulate Matter
- Carbon Monoxide
- Dioxins/Furans
- Nitrogen Oxides
- Sulfur Dioxide
- Fugitive Ash
- Opacity

CISWI Revisions

In addition to the emission limits, the revised CISWI rule will require:

- Stack testing for newly regulated subcategories
- Monitoring for newly regulated subcategories
- Additional monitoring for new sources
- Annual inspections of emission control devices
- Annual visible emissions test of ash handling operations
- Requirements for the owner/operator to submit test data

Section 60.2242 - All CISWI units and air curtain incinerators must operate pursuant to a permit issued under Section 129(e) and Title V of CAA.

Conclusion

- EPA held 3 public meetings across the country in June to solicit comments regarding the 4 proposed rules. The public comment period is still open and comments must be received on or before August 3, 2010.
- The Court order requires EPA to complete the Final Rules by December 16, 2010.
- The proposed rules will take effect 6 months after publication of the Final Rules in the Federal Register.

For more information:

- To download the proposed rules from EPA's Web site, go to

Recent Actions at:

<http://www.epa.gov/ttn/oarpg/new.html>

- Other background information is also available at:

<http://www.regulations.gov>

Questions???