Industrial Boiler MACT – Impact and Control Options

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What is the Boiler MACT?

Applies to industrial, commercial, or institutional boilers (and process heaters) located at major sources of hazardous air pollutants ("HAPs")
What is a Boiler?

“Boiler” is defined as an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water.
What is a Major Source?

- Major source
  - Potential to emit 10 tpy or more of any individual HAP or 25 tpy or more of any combination of HAPs
  - Applies to the entire site, not just the boiler

- Note: Boilers located at non-major – i.e., “area” – sources of HAPs may be subject to EPA’s Area Source Boiler Rule.
  - The same size/type of boiler may be regulated very differently, depending on whether it is located at a major source or an area source.
What are HAPs?

- HAPs
  - Regulated under Clean Air Act § 112 (NESHAP)
  - Known/suspected to cause cancer/other health problems and/or environmental effects
  - 180+ listed HAPs, including mercury, metals, dioxins/furans, etc.
  - Other boiler rules cover criteria pollutants only (e.g., PM, SO2, Pb, etc.)
Regulatory History

- First proposed – 2002
- First promulgated – 2004
- Vacated – 2007
- Re-proposed – 2010 (EPA received > 4,000 comments)
- Promulgated (again) – 2011 (judicial/administrative challenges filed)
- EPA issued “Delay Notice” staying rule – 2011
- Reconsideration proposed – Dec. 2011 (comments were due Feb. 21, 2012)
- Promulgation of final reconsideration – expected Spring 2012
Legal Proceedings

- Challenges pending in D.C. Circuit – litigation is stayed pending reconsideration
  - Promulgation of final reconsideration will likely trigger new round of challenges
- EPA issued “No Action Assurance” letter in Feb. 2012 – will not pursue enforcement action for violations of certain notification deadlines (e.g., Initial Notification)
  - Also applies to CISWI (notices related to commencing constructing)
Related Rules

- Area Source Boiler Rule
- Identification of Non-Hazardous Secondary Materials that are Solid Waste (NHSM rule)
- New Source Performance Standards (and Emission Guidelines) for Commercial and Industrial Solid Waste Incineration Units (CISWI)

- Similar regulatory development schedule
Boiler MACT vs. CISWI

- Does your boiler combust fuel or solid waste (as defined under 40 C.F.R. pt. 241)?
  - If fuel → then Boiler MACT*
  - If solid waste → then CISWI

- The same/type of boiler may be regulated very differently, depending on its “fuel” type.

*Potential applicability of Utility MACT to EGUs
The CAA Section 112 MACT floor setting process:

- Limits for **existing sources** must be at least as stringent as the average emission limit achieved by the best performing 12 percent of existing sources (for which EPA has emission info).
- Limits for **new sources** must be at least as stringent as the control level achieved in practice by the best controlled similar source.
- EPA must also consider “beyond the floor” control options.
Final Boiler MACT – Subcategories

- Subcategories of boilers and process heaters are based on design and fuel type:
  1. Units designed to burn pulverized coal/solid fuel
  2. Stokers designed to burn coal/solid fossil fuel
  3. Fluidized bed units designed to burn coal/solid fossil fuel
  4. Stokers designed to burn biomass/bio-based solids
  5. Fluidized bed units designed to burn biomass/bio-based solids
  6. Suspension burners/Dutch Ovens designed to burn biomass/bio-based solids

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Subcategories of boilers and process heaters are based on design and fuel type:

7. Fuel cells designed to burn biomass/bio-based solids
8. Hybrid suspension/grate units designed to burn biomass/bio-based solids
9. Units designed to burn liquid fuel
10. Units designed to burn liquid fuel located in noncontinental States and territories
11. Units designed to burn gas 2 (other) gases
The Boiler MACT Reconsideration proposal would add the following subcategories:

- Stokers/sloped grate/others designed to burn wet biomass fuel
- Stokers/sloped grate/others designed to burn kiln-dried biomass fuel
- Units designed to burn heavy liquid fuel
- Units designed to burn light liquid fuel
# Boiler MACT Emission Limits – Final Rule vs. Reconsideration

<table>
<thead>
<tr>
<th></th>
<th>Particulate Matter (PM)</th>
<th>Hydrogen Chloride (HCl)</th>
<th>Mercury (Hg)</th>
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<tbody>
<tr>
<td>Existing – Pulverized Coal</td>
<td>.039</td>
<td>.035</td>
<td>.0000046</td>
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<tr>
<td>Existing - Liquid</td>
<td>.0075</td>
<td>.00033</td>
<td>.0000035</td>
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</tbody>
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## Boiler MACT Emission Limits – Final Rule vs. Reconsideration

<table>
<thead>
<tr>
<th>RECONSIDERATION (in lb/MMBtu of heat input)</th>
<th>Filterable PM</th>
<th>HCl</th>
<th>Hg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing – Coal - Burning Pulverized Coal</td>
<td>.044</td>
<td>.022</td>
<td>.0000031</td>
</tr>
<tr>
<td>Existing – Liquid</td>
<td>.062 (heavy)</td>
<td>.0012</td>
<td>.000026</td>
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<tr>
<td></td>
<td>.0034 (light)</td>
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</tbody>
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Industry Comments re: Proposed Reconsideration

- Replacing numeric emission limits with work practice standards (certain units/pollutants)
- Complying with proposed CO limits
- Vacillating between Boiler MACT and CISWI
- Costs
- Timeframe for demonstrating compliance
- Insufficient time to comment
Questions?

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