FINAL Industrial Boiler and Process Heater MACT

McIlvaine Hot Topic Hour
March 10, 2011

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What is a MACT?

Under Section 112 of the Clean Air Act, MACT is:
• “the maximum degree of reduction in [HAPs],” …
• “taking into consideration
  – the cost of achieving such emission reduction,
  – any non-air quality health and environmental impacts and energy requirements,”
• that the Administrator “determines is achievable …”

The MACT “floor” is deemed achievable:
EXISTING: “the average emission limitation achieved by the best performing 12 percent of existing sources”
NEW: the emission limit achieved by the best controlled “similar” source
Historical Perspective

• EPA adopted the Industrial Boiler MACT in 2005, along with a rule to separate industrial boilers from waste incinerators

• Divided industrial boilers from incinerators based on “energy recovery”

• D.C. Circuit vacated both rules in June 2007

• The Court held that any facility combusting “any solid waste” at all must be regulated as an incinerator (CAA 129) instead of a boiler (CAA 112)
June 2010 Proposal

- Published June 4, 2010 (75 Fed. Reg. 32006)
- Applies to 13,500 units (~ 11,500 natural gas)
- Subcategorized by fuel (coal, biomass, oil, gas)
- Subcategorized by technology for biomass (stokers and fluidized bed)
- Increased stringency and addition of new limits not found in the 2005 MACT rule (dioxins/furans)
- Required compliance by all new sources upon startup and by all existing sources within 3 years of final rule
Request for Delay

After considering the numerous comments submitted, EPA recognized:

- Some of its proposed limits were unachievable
- To correct those limits, its rule may be subject to challenge for failure to take comment on the new limits
- Additional time was needed to re-propose the rule, take comment, and issue a new final rule

EPA asked for an extension until June 2011 for the re-proposal and until April 2012 for the final rule.
The court denied EPA’s request for more time, stating that it had already delayed the release of the standards for too long.

- The Court gave EPA until February 21, 2011 to issue the final rule.
- EPA sent the final rule to the White House Office of Management and Budget that afternoon.
- The final rule was released to the public on February 23, 2011.
### Final Rule vs. Proposed Rule

<table>
<thead>
<tr>
<th>Type of Unit</th>
<th>PM</th>
<th>CO</th>
<th>HCl</th>
<th>Hg</th>
<th>D/F</th>
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<tbody>
<tr>
<td>New Pulverized Coal</td>
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<td>Existing Pulverized Coal</td>
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<td>New Biomass Stoker</td>
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<td>New Biomass Fluidized Bed</td>
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<td>Existing Biomass Stoker</td>
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<td>Existing Biomass Fluidized Bed</td>
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<td>New Liquid Fuel</td>
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<td>Existing Liquid Fuel</td>
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Compliance Options

Available Controls:

PM:  baghouse, scrubber, wet ESP  
CO:  good combustion, catalytic oxidation  
HCl:  scrubber, sorbent injection  
Hg:  activated carbon injection, baghouse, scrubber  
D/F:  activated carbon injection?

Sources must do whatever necessary to comply, just installing additional controls will not suffice!
Challenges for “New” Biomass

• “New” biomass boilers may have trouble meeting the final MACT standards
  – PM limit of 0.0011 lb/mmBtu
  – HCl limit of 0.0022 lb/mmBtu
  – CO limit of 160 ppm (stokers only)

• The lower limits were the result of EPA’s effort to combine coal and biomass (in order to give biomass some “flexibility”)

• Existing boilers can become new if “reconstructed”
  – Over 50% of the cost of a comparable entirely new source
  – Technically and economically feasible to meet standards
## Other Changes in Final Rule

<table>
<thead>
<tr>
<th>Less Stringent</th>
<th>More Stringent</th>
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<tr>
<td>• No CO CEMS</td>
<td>• Affirmative defense procedure for malfunctions</td>
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<td>• Work practice standards during startup/shutdown</td>
<td>• More prescriptive energy assessment process</td>
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<td>• Work practice standards for emergency boilers</td>
<td>• “Output-based” limits?</td>
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<td>• Boilers &lt; 10 mmBtu/hr only need annual tune-ups</td>
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Other Related Rules

In addition to the MACT proposal, EPA issued three other related rules:

1. Area Source Industrial Boiler MACT
2. CISWI MACT Proposal
3. “Solid Waste” Definition
Reconsideration

- Because of concerns over the legality of the significant changes between proposed rule and final rule, EPA is taking comment on the final rule (?)
- EPA’s Gina McCarthy (Asst. Administrator Office of Air and Radiation) indicated that EPA is comfortable with the final rule, but would fully consider all comments and other petitions for reconsideration
- No clear expectation on timing
- Some uncertainty remains for boiler owners
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