

FINAL Industrial Boiler and Process Heater MACT

McIlvaine Hot Topic Hour
March 10, 2011

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What is a MACT?

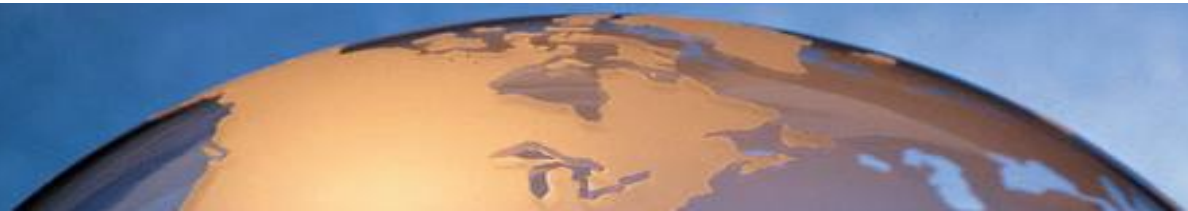
Under Section 112 of the Clean Air Act, MACT is:

- “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.



Request for Delay – DENIED

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

Type of Unit	PM	CO	HCl	Hg	D/F
New Pulverized Coal	Green	Red	Green	Green	Green
Existing Pulverized Coal	Green	Green	Green	Green	Yellow
New Biomass Stoker	Red	Red	Red	Green	Green
New Biomass Fluidized Bed	Red	Green	Red	Green	Green
Existing Biomass Stoker	Green	Red	Green	Green	Green
Existing Biomass Fluidized Bed	Green	Green	Green	Green	Yellow
New Liquid Fuel	Red	Green	Green	Red	Yellow
Existing Liquid Fuel	Green	Green	Red	Red	Green



Compliance Options

Available Controls:

PM: baghouse, scrubber, wet ESP

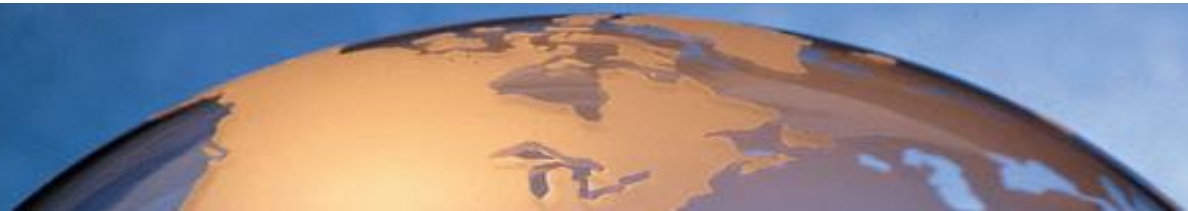
CO: good combustion, catalytic oxidation

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

Less Stringent	More Stringent
<ul style="list-style-type: none">• No CO CEMS• Work practice standards during startup/shutdown• Work practice standards for emergency boilers• Boilers < 10 mmBtu/hr only need annual tune-ups	<ul style="list-style-type: none">• Affirmative defense procedure for malfunctions• More prescriptive energy assessment process• “Output-based” limits?



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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