

Experience to Date with Boiler MACT

A Prequel to Utility MACT

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McIlvane Hot Topic Hour
Utility MACT – Impact and Compliance Strategy

About AECOM

- Fortune 500 - #352
- Acquired ENSR 2005; “AECOM Environment”
- Nationwide Network of Many Offices Working Together
- National Leader in Utility Sector Consulting
- Hundreds of MACT/RACT/BACT Emission Control Evaluations
- Case-by-Case (112(g)) MACT Determinations for New Utility Units

MACT

Clean Air Act Section 112(d)

“The MACT standards for existing sources must be at least as stringent as the average emission limitation achieved by the best performing 12 percent of existing sources...”

“For new sources, MACT standards must be at least as stringent as the control level achieved in practice by the best controlled similar source.”

Boiler MACT Experience, 2010

- **Maximum** (*or Hypothetical?*)

- Hard Numerical Limits for Several Fuel/Firing Subcategories
- ICR Data – Stack Testing from Selected Units
- Top 12% (and Best Single Unit); Pollutant-by-Pollutant
- For Any One Pollutant, 88% Cannot Replicate Stack Test
- Presumption that if 12% Had One Low Stack Test, for One Pollutant, Then Every Other Boiler Could Too
- Limits Apply Simultaneously and Continuously!

*Best Utility Units are Much Better Controlled;
Will Yield Even Lower Numerical Results*

Boiler MACT Experience, 2010 (cont.)

- **Achievable** (*or Possible?*)

- Proposed Limits Have Never Been Demonstrated by any Known Boiler
 - Simultaneously
 - Continuously
 - Worst Case Operating Conditions
 - Startup, Low Loads, Transition
- Combination Fuels Must Meet the More Stringent Category
- Compliance in 3 yrs (4 with Extension)
- EPA Projects no New Solid Fuel Boilers (and Many Existing Will Shut Down)

Boiler MACT Experience, 2010 (cont.)

- **Control** (*or Coincidence?*)
 - How are the Tested Boilers Controlling Dioxin?
 - CO (Surrogate for Organic HAPs) vs. NO_x
 - How can CO be Reduced to 1 ppm Firing No. 6 Oil?
 - How are Similar Boilers Controlling Each Pollutant to Lowest 12% Stack Test Levels Continuously and Simultaneously?

Boiler MACT Experience, 2010 (cont.)

• **Technology** *(or Educated Guess?)*

(EPA – Oxidation Catalyst + ACI + FF + Wet FGD)

- What Control Technology can I Purchase to Achieve Continuous Compliance with MACT?
- Commercial Guarantees for Dioxin Limits?
- Commercial Guarantees for Continuous Compliance (inc. Worst Case Fuels and Operating Conditions)?
- Oxidation Catalyst Retrofit for No. 6 Oil? Solid Fuels?
- Incinerators Control High Inlet Levels of Dioxin with ACI
- \$10-\$100+ Million for Something that “Should Work”.

MACT Compliance Strategy Development

- Will the Rule be Modified? Stayed, Remanded, Vacated?
- What Are Our Dioxin Emissions Now? Rolling 30-Day CO?
- If We Modify the Unit / Switch Fuels – Do We Then Have to Meet New Unit MACT Limits?
- We are Permitted for Multiple Fuels. Might We Be Subject to Multiple Limits?
- Can Any Advanced Combustion Controls Satisfy Both MACT CO *and* Future NO_x Limits?
- In Order to Achieve Compliance by 2015, We had to Start Planning Last Year?
- How Much Will This All Cost? Should We Just Convert To Gas?
- How Do We Explain This to Management ?
- When Will I be Able to Retire?

Questions?

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