

Boiler MACT ??

Prelude to Utility MACT

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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

Where Are We on Boiler MACT?

*“ When an irresistible force (like MACT);
Meets an old immovable object (like the Courts);
You can bet just as sure as you live;*

*Somethin’s gotta give,
Somethin’s gotta give,
Somethin’s gotta give!”*

(Johnny Mercer, 1974)

Boiler vs. Utility MACT

- Limit Emissions of Hazardous Air Pollutants
- Electric Generating Units (“Utility MACT”)
 - Fossil Fuel-fired Boilers
 - 25+ MW, for Sale
- Industrial, Commercial, Institutional Boilers (“Boiler MACT”)
 - All the Rest
 - Utility Scale Biomass Units
 - Utility Scale Coal Boilers that do not Sell Electricity
 - Fossil Fuel-fired Boilers that Produce Process Steam
 - Utility Auxiliary Boilers
- Making the MACT Sausage

Some Suspect a Hidden Agenda...

“The President has turned the strong arm of the EPA, through rulemaking, to put coal-fired generation out of business in the U.S.”

Opinion – Dr. Robert Peltier, PE; Power Magazine Editor in Chief,
Power Magazine, January 2011

Boiler MACT Timeline

- 1990 Clean Air Act – EPA Shall Develop Maximum Achievable Control Technology (MACT) Limitations for Major Categories of Hazardous Air Pollutant (HAP) Emissions
- 2003 Partial Consent Decree
- 2004 – EPA Promulgates 1st Boiler MACT Rule; Compliance 2007
- 2007 – After many Facilities had Already Spent Substantial Capital to Bring their Boilers into Compliance, the D.C. Circuit Court of Appeals Vacated EPA's Rule
- 2007 – EPA Initiates Information Collection Requests (ICR)
- 2007 – Court Orders EPA to Promulgate a Replacement ICI Boiler MACT Rule by November 2010

Boiler MACT Timeline (cont.)

- 2009 – Obama Administration Takes Office
- June 29, 2010 – EPA Proposes Four New Boiler MACT Rules
- Mid - 2010 Industry Review – Proposed MACT Rules Unworkable
- September 2010 – EPA Receives 4,800 Comments & New Data
- October 2010 – EPA Requests an Extension to the Court Ordered Deadline (November 2010); Court Grants Extension to January 16, 2010
- November 2010 – US Mid-term Election
- December 2010 – Growing Concern in Congress, Adverse Affect on Jobs and GDP

Boiler MACT Timeline (cont.)

- December 2010 – EPA Requests Extension to April 2012; If Boiler MACT Rules “Flawed”, Need to be Re-proposed
- January 2011 – Sierra Club (the plaintiff in the case) Objects to any Extension – EPA has had Plenty of Time Already
- January 2011 - Industry Groups Petition Court to Provide EPA at Least Until June 2011 to Fix Boiler MACT
- January 12, 2011 – Court Grants EPA a 5-day Extension (to January 21, 2011)
- January 20, 2011 – Court Agrees with Sierra Club – EPA has had Plenty of Time Already. Grants Extension to Promulgate Final Boiler MACT Rule Only to February 21, 2011

Boiler MACT Timeline (cont.)

- January 20, 2011 – EPA Announces Final Boiler MACT Rule will be Promulgated by February 21, 2011 (and Effective April 21, 2011) but will Undergo *“Reconsideration”* Process
 - *“The Standards will be significantly different”*
 - *“The agency believes these changes deserve further public review and comment”*
 - *“EPA intends to ensure that the rules will be practical to implement”*
- January 20, 2011 – “Final” Boiler MACT Rules Sent to OMB
- January 21, 2011 – “Inhoffe Sees Strong Bipartisan Opposition to Boiler MACT”
 - *“Massive Regulatory Failure”*
 - *“800,000 Jobs at Risk”*
 - *There is no doubt that Republicans, and many Democrats, will not allow this Rule to stand as currently drafted”*
- January 24, 2011 – House Energy and Commerce Chairman Upton
 - *“Boiler MACT Rules Pose Significant Economic Risks”*
 - *“Underscore the Dangers of the Agency’s Flawed Regulatory Tactics”*
 - *“EPA Track Record of Regulating Too Much Too Fast While Ignoring Potentially Devastating Economic Consequences”*

Boiler MACT Compliance Schedule

- Facilities will have Three Years from the Effective Date as Published in the Federal Register – Continuous Compliance
 - Analysis & Planning
 - Compliance Strategy Development
 - Preliminary Engineering & Budgetary Cost Estimate
 - Internal Capital Appropriations
 - Air Permitting
 - Preparation of Specifications
 - Vendor Bidding/Selection Process
 - Construction
 - Commissioning
 - Emissions Testing & Optimization
- *Industrial Facilities may not Know Exactly what to Comply With!*
- Competition for Resources with EGUs
- Facilities may Request a 1-yr Extension for Hardship

EGU MACT

- March 16, 2011 – Current Court Ordered Deadline to propose EGU MACT
- Extension to Mid 2011?
- November 16, 2011- Scheduled Final EGU MACT deadline
- 3 Years (+one for hardship) from Publication to be in Compliance
- Boiler MACT Sausage Precedents for the EGU MACT Sausage!

Maximum Achievable Control Technology

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.”

Is Boiler MACT Flawed?

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

- Hard Numerical Limits for Several Fuel/Firing Subcategories
- ICR Data – Stack Testing from Selected Units
- Average of Top 12% (and Best Single Unit); Pollutant-by-Pollutant
- For Any One Pollutant, 94% Cannot Replicate Stack Test
- Presumption that if 6% 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*

Is Boiler MACT Flawed?

- **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)

Is Boiler MACT Flawed?

- **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?

Is Boiler MACT Flawed?

• **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”.

PAH's vs. CO or THC?

- The Organic HAPs of Greatest Health Concern are Polycyclic Aromatic Hydrocarbons
- EPA's Proposed MACT Standards to Limit CO are based on a Presumed Direct Correlation of CO and PAH
- New Findings Reported! - Utility ICR Data
 - Presentation by Mr. Sid Nelson of Albermarle at EUEC, 2/1/2011
 - Evaluated the Utility ICR Data that EPA Has for CO / THC and PAH's
 - According to Mr. Nelson, EPA's Data Show an *Inverse* Relationship!

What's Next?

- “Significant Changes”
 - Limited Use Exemption?
 - Health Based Compliance Alternative?
 - What to do with CO Limits? Simultaneous NO_x Control?
 - Dioxin / Furan Work Practice Standards?
 - Additional Subcategories
 - Separate Start Up – Shutdown Limits or Work Practice Standards?
 - Limits Being Achieved by Real-World Boilers?
 - Multi-fuel or Combination Fuel Boilers – pro-rated Limits?
- Petitions for Re-consideration
- Re-Definition of MACT Floor Process? (“Cherry Picking” and the “Frankenboiler”)
- Political Pressure, Legislative Initiatives, Jobs, Unions, Economy
- Litigation
- Next Up – EGU MACT

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Questions?

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