



# **STATUS OF EPA's MACT RULEMAKINGS FOR BOILERS**

Carolinas Air Pollution Control Association  
Fall Meeting  
Myrtle Beach, South Carolina  
October 22, 2009



# Rulemakings

- Boiler MACT

- Industrial, Commercial, and Institutional Boiler and Process Heater NESHAP
- Subpart DDDDD of part 63
  - Promulgated – September 13, 2004
  - Vacated by Court – July 30, 2007
- Applies to boilers at major sources of HAP

- Area Source Rulemaking for Boilers



# Overview of Section 112

- Mandates that EPA develop standards for hazardous air pollutants (HAP) for both major and area sources
- Definitions
  - Major source is a facility that emits or has PTE 10 tons per year of single HAP or 25 tpy of total HAP
  - Area source is a facility that is not a major source
- Standards are based on maximum achievable control technology (MACT)
- Sets minimum stringency criteria (MACT Floor)
- MACT may differ for new and existing sources
- Allows EPA to establish work practice requirements
- Allows subcategories based on class, type, or size



# MACT Floor

---

- **For existing sources:**
  - “The average emission limitation achieved by the best performing 12 percent of existing sources..”
- **For new sources, the MACT floor is:**
  - “The emission control achieved in practice by the best controlled similar source...”



# Vacated Boiler MACT Litigation

---

- Litigation

- Jointly filed by NRDC and Sierra Club
- Combined with litigation on the CISWI Definition Rule

- Issues

- Failed to establish limits for all subcategories and HAP
  - “No emission reductions” MACT floor
- Adopted individualized risk-based exemptions
  - Health-based compliance alternatives
- Regulated solid waste incineration units under the Boiler MACT, instead of the CISWI rule



# LITIGATION

- March 13, 2007 - Brick Decision
  - “no emission reduction” MACT floors unlawful
  - Cannot use work practice without making finding required by 112(h)
    - Not practicable to enforce due to technical or economic limitations
- June 19, 2007 – Boiler MACT Decision
  - Vacated CISWI Definition Rule
    - Could not define “solid waste” based on type of combustion unit
  - Vacated Boiler MACT
    - Court concluded that the Boiler MACT would be substantially revised due to vacatur of CISWI Definition Rule
  - Did not rule on Boiler MACT issues

# Boiler MACT - Revision

- Schedule

- Parallel court-ordered schedules for Boiler MACT and area source boiler rule
  - Proposal – April 15, 2010
  - Promulgation – December 16, 2010

- Revisions

- Define solid waste
  - EPA's Office of Solid Waste is leading the development of a definition of non-hazardous solid waste
    - OSW issued ANPR on waste definition January 2, 2009
    - Proposal scheduled by April 15, 2010
  - Remove waste-burning units from Boiler MACT database
- Reassess emission limits
  - In accordance with recent court decisions
- Develop MACT floor "emission limits" for subcategories and HAP currently having no emission standards
  - Replace "no control floors"

# ICR

- ICR purpose is to address the court decisions
  - Revise population of affected units under section 112 and 129
  - Update existing emissions database
- ICR is for major source facilities with boilers and facilities with CISWI units
- ICR has two phases
  - First phase: survey
    - Questionnaire to collect info on materials combusted, controls, and emissions
    - Timing
      - Mailout August 15, 2008
    - Sent to all facilities (~3,000) that were subject to Boiler MACT
    - Sent to about 500 CISWI facilities
  - Second phase: testing
    - About 300 facilities (200 Boiler MACT, 100 CISWI)
    - Results due October 15 – November 15, 2009
    - Testing needed:
      - Fill data gaps
      - Determine appropriate surrogates
      - Determine variability

# Summary of Survey Database (Boiler MACT)

- No. of facilities = 1549
  - Small entities = 144
  - Breakdown by industry sector
- No. of units = 13,100
  - Units >10MMBtu/hr
    - Boilers = 4265
      - Coal – 537
      - Oil – 669
      - Natural Gas – 1998
      - Biomass 338
    - Process Heaters = 2144
  - Units <10MMBtu/hr
    - 6694 gas-fired

Industry Sector	Number of Facilities
Utilities	161
Food Manuf.	107
Wood Product Manuf.	188
Paper Manuf.	165
Petroleum Manuf.	71
Chemical Manuf.	216
Plastics & Rubber Products Manuf.	82
Primary Metals & Metals Product Manuf.	96
Transportation Equip. Manuf.	90
Furniture Manuf.	45
Educational Services	27
National Security	22

# Summary of Boiler MACT Test Program

- Data requested include CO, THC, dioxins, formaldehyde, HCl, HF, Hg, 11 non-mercury metals, PM (filterable, condensable, PM<sub>2,5</sub>), NO<sub>x</sub>, and SO<sub>2</sub>, and fuel analysis
- No. of facilities requested to conduct testing = 158
  - 5 facilities are testing 2 units
  - 6 facilities conducting 30-day CEM test for CO/THC/methane/NO<sub>x</sub>
    - 2 coal units, 2 biomass units, 2 gas units
  - Breakdown of fuels being tested
    - 30 natural gas units
    - 48 coal units
    - 37 biomass units
    - 32 liquid fuel units
    - 11 process gas units (refinery, coke oven gas, blast furnace gas, landfill gas)
    - 5 nonfossil liquid/solids units
- No. of facilities withdrawn (but replaced by others) = 64
  - Reasons varied for withdrawal/replacement

Reason for Withdrawal	Number of Facilities
Shutdown	22
Not burning listed fuel	9
Not boiler or process heater	6
Hardship	5
No sampling ports	5
Subject to another MACT	3
Common Stack	2
Area Source	3
CISWI Unit	2
Seasonal – not currently operating	2
Not listed boiler type	2



# Boiler Rulemakings Questions

- How will we subcategorize boilers and process heater?
  - By boiler type?
  - By fuel type?
  - By industry?
- Will surrogates be used?
  - CO (or THC) for organic HAP?
  - PM (or PM2.5) for metals?
  - HCl for acid gases (HF)?
- What HAP will be regulated for gas-fired units?
- Will the HBCA be included in the proposal?
- Will emission data from units that installed controls to meet the vacated Boiler MACT be used (i.e. MACT on MACT)?

# Area Source Provisions

- **Section 112(d)(5) allows for area source standards based on GACT (Generally Available Control Technology)**
  - Major source standards are based on MACT
  - Under GACT may consider costs and economic impacts
- **Focus of standards is on the 30 Urban HAP**
- **Section 112(c)(6) requires listed categories be subject to MACT**
  - Both industrial boilers and institutional/commercial boilers are on list of 112(c)(6) source categories
    - Mercury
    - POM
- **Section 112(h) allows EPA to promulgate a work practice standard, if it is not feasible to enforce an emission standard**
  - Not feasible means the application of measurement methodology is not practicable due to technical or economic limitations
- **May exempt area sources from Title V if compliance would be impracticable, infeasible, or unnecessarily burdensome**

# Boiler Area Source Projected National Distribution

- Total = 137,000 existing boilers
  - Fuel
    - Coal: 3,450 units - 89% less than 10 MMBtu/hr
    - Biomass: 10,500 units - 93% less than 10 MMBtu/hr
    - Fuel Oil: 123,000 units – 95% less than 10 MMBtu/hr

<u>Sector</u>	<u>Projected US Total</u>	
	<u>Coal-fired</u>	<u>Biomass-fired</u>
● Schools	371	353
● Church/Temple	138	181
● Hotel/Motel/Inn	66	171
● Apartments/Office	199	433
● Health Services	50	101
● Food	55	262
● Restaurant	11	40
● Municipal Facilities	89	171
● Lumber	6	685



# INFORMATION AND CONTACT

---

- Information on the MACT and area source rulemakings for industrial, commercial, and institutional boilers is available on EPA's web site at:
  - [www.epa.gov/ttn/atw/combust/list.html](http://www.epa.gov/ttn/atw/combust/list.html)
- Newest version of the ICR survey database is posted at:
  - <http://survey.erg.com/ss/wsb.dll/s/7g8d/>
- Contact: Jim Eddinger  
919-541-5426  
[eddinge.jim@epa.gov](mailto:eddinge.jim@epa.gov)