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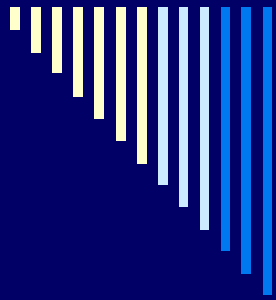
# **Air & Waste Management Association**

## **A Realistic Look At The New Industrial Boiler MACT**

**October 25, 2011**

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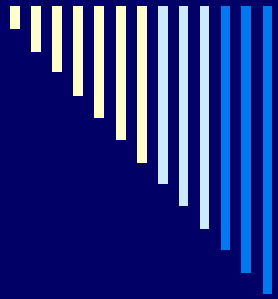
# Three Interrelated Standards

40 C.F.R. Part 63, Subpart JJJJJJ, National Emission Standards for Area Sources: Industrial / Commercial / Institutional Boilers

Related Rules:

National Emission Standards for Major Sources: Industrial / Commercial / Institutional Boilers and Process Heaters (Subpart DDDDD)

Standards of Performance for New Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units (“CISWI”)

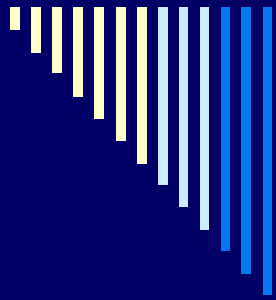


## Separate by Statute

Regulation of solid waste incineration is mandated by Section 129 of the Clean Air Act. CISWI was promulgated December 1, 2000. Solid waste incineration sources regulated under Section 129 are exempt from MACT standards under Section 112.

Section 112 establishes separate regulatory programs for major sources of hazardous air pollutants (“HAPs”) and for area sources of HAPs.

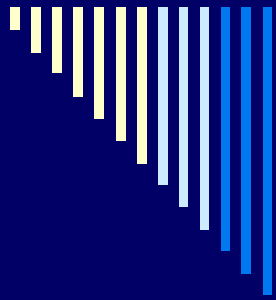
CISWI, Subpart DDDDD and Subpart JJJJJ are, therefore, mutually exclusive by statute.



## EPA Deadlines

In July 2001, Sierra Club filed several lawsuits against EPA to compel EPA to complete the regulation of HAPs required under Sections 112 and 129.

In March 2006, the court entered an order requiring EPA, among other things, to issue MACT rules covering at least 90% of the aggregate emissions of each HAP by January 2011.



# The Initial Boiler MACT Rules

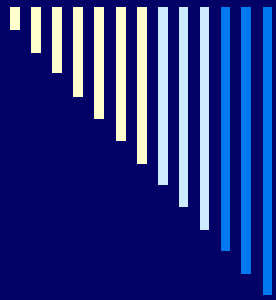
Major Source Boiler rule, Subpart DDDDD, first proposed January 13, 2003.

Major Source Boiler rule promulgated September 13, 2004, amended on December 28, 2005 and December 6, 2006.

CISWI Definitions Rule promulgated September 22, 2005.

The CISWI Definitions Rule exempted from CISWI units that combust solid waste if there was thermal energy recovery. Units with heat recovery would be regulated under Subpart DDDDD.

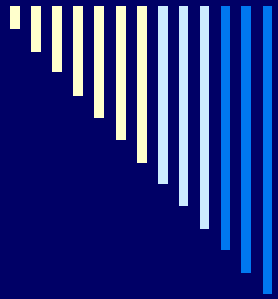
CISWI Definitions Rule vacated June 8, 2007, *Natural Resources Defense Council v. EPA*.



## Initial Rules Vacated

The *Natural Resources Defense Council* court held that EPA had no basis to exclude units with heat recovery from Section 129 and, therefore, vacated the CISWI Definitions Rule.

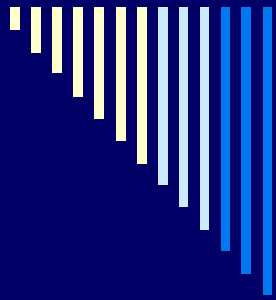
Noting that its decision would shift thousands of units with heat recovery from Subpart DDDDD to CISWI and would, consequently, require EPA to reconsider the stringency of both Subpart DDDDD and CISWI, the court vacated and remanded both rules.



## EPA's Second Proposal

Subpart JJJJJJ for area sources and new CISWI rule and new Subpart DDDDD for major sources proposed June 4, 2010.

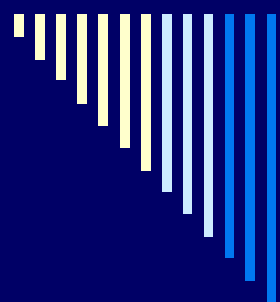
Over 4,800 comments were submitted. EPA agreed that the comments raised significant new issues that required further consideration.



## Deadline Crunch; Extension Denied

Between 2006 and 2010, EPA issued 48 MACT standards. However, EPA could not meet the January 21, 2011 deadline for regulating 90% of all HAP emissions under the 2006 order in *Sierra Club* without Subpart JJJJJJ. Therefore, in December 2010, EPA asked the court to extend the deadline to April 13, 2012 to allow it time to respond to the 4,800 comments.

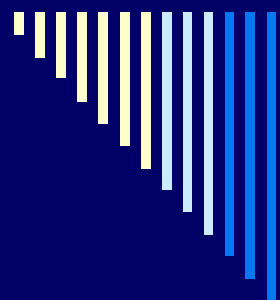
The court denied EPA's request, finding that EPA had failed to explain adequately why it would be unable to respond to the 4,800 comments and extended the deadline to February 21, 2011.



## Rules Go Forward; Major Source and CISWI Rules Stayed

Subpart JJJJJJ, revised CISWI rules and Subpart DDDDD were signed February 21, 2011 and published in the *Federal Register* on March 21, 2011.

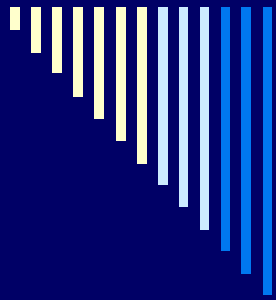
Revisions to CISWI rules and Subpart DDDDD stayed May 18, 2011, while EPA reconsiders aspects of the rules and pending judicial review. Litigation is pending in United States District Court.



## Proposed Legislation

H.R. 2250 (EPA Regulatory Relief Act of 2011) is a bill that would nullify Subpart DDDDD, Subpart JJJJJ, the CISWI Rule and the CISWI Definitions Rule and give EPA 15 months to promulgate new rules. Industry would be provided no less than 5 years to comply with the new rules.

H.R. 2250 passed the House of Representatives October 13, 2011. The Bill is pending in the Senate.



## Administrator Jackson Fights Back

Except from Lisa P. Jackson Op-Ed in L.A. Times, October 21, 2011:

Using the economy as cover, and repeating unfounded claims that "regulations kill jobs," [Republicans in Congress] have pushed through an unprecedented rollback of the Clean Air Act, the Clean Water Act and our nation's waste-disposal laws, all of which have successfully protected our families for decades. We all remember "too big to fail"; this pseudo jobs plan to protect polluters might well be called "too dirty to fail."

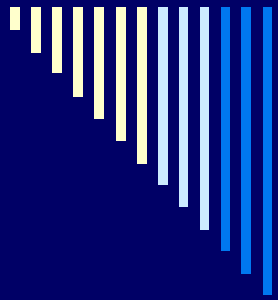


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## Jackson, cont'd

The House has voted on provisions that, if they became law, would give big polluters a pass in complying with the standards that more than half of the power plants across the country already meet. The measures would indefinitely delay sensible upgrades to reduce air pollution from industrial boilers located in highly populated areas. And they would remove vital federal water protections, exposing treasured resources such as the Gulf of Mexico, Lake Erie, the Chesapeake Bay and the Los Angeles River to pollution.

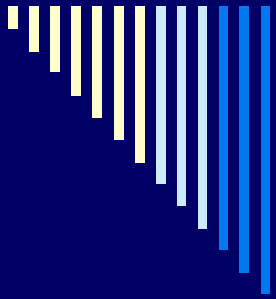
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## Jackson, cont'd

How we respond to this assault on our environmental and public health protections will mean the difference between sickness and health — in some cases, life and death — for hundreds of thousands of citizens.

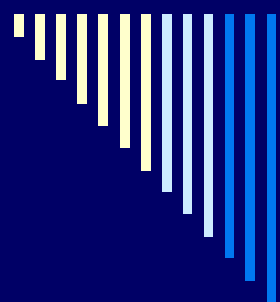
This is not hyperbole . . . .



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Subpart JJJJJJ remains in force.

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## Applicability

Subpart JJJJJJ applies to:

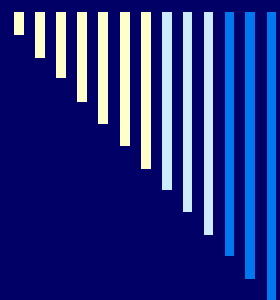
Industrial, commercial and institutional boilers at an area source.

“Area source” = potential to emit < 10 tpy for any HAP and <25 tpy for all HAPs combined



# Exclusions

- Waste heat/heat recovery boilers
  - Boilers that combust solid waste (any amount)
  - Boilers regulated under other MACT standards
  - Boilers regulated under Section 129 (e.g., CISWI)
  - Boilers required to have a permit under Section 3005 of Solid Waste Disposal Act
  - Boilers used specifically for research and development
  - Gas-fired boilers
  - Hot water heaters
  - Boilers used as a control device to comply with another MACT where at least 50% of heat input is provided by the MACT regulated gas stream
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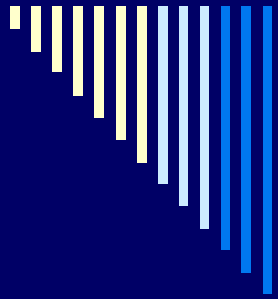


# Categories Of Boilers Regulated Under Subpart JJJJJ

New vs. Existing (commenced construction on or before June 4, 2010)

Large ( $\geq 10$  mmBtu/hr) vs. Small ( $<10$  mmBtu/hr)

Fuel Type (Coal, Biomass, Oil, Gas)

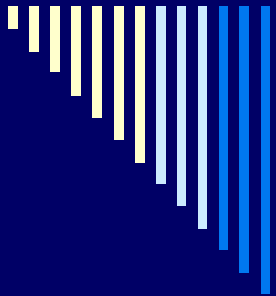


# Gas-Fired Boilers Are Exempt

Gas-fired boilers burn any gaseous fuels (including, but not limited to, natural gas, process gas, landfill gas, coal-derived gas, refinery gas, hydrogen and biogas).

May not combust any solid fuels.

May fire liquid fuels during periods of natural gas curtailment or supply interruption or for periodic testing. Periodic testing may not exceed a total of 48 hours during any calendar year.



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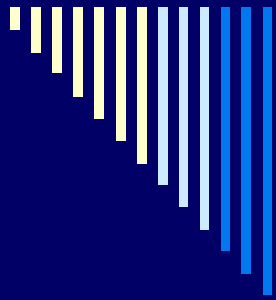
## Biomass vs. Coal vs. Oil (only relevant for large boilers)

Biomass Category = burns at least 15 percent biomass on an annual heat input basis. Biomass is any biomass-based solid fuel that is not a solid waste. Biomass includes, but is not limited to, wood residue and products; animal manure, including litter and bedding material; vegetative agricultural and silvicultural materials.

Coal Category = burns any solid fossil fuel and <15% biomass. Solid fossil fuel includes, but is not limited to coal, petcoke and tire derived fuel.

Oil = burns any liquid fuel and <15% biomass and no solid fossil fuels. Liquid fuel includes, but is not limited to petroleum (and any liquid fuel derived from petroleum), distillate oil, residual oil, used oil, liquid biofuels and biodiesel.

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## Emission Limits And Work Practices

New and existing “small” boilers have **no numeric emission limits.**

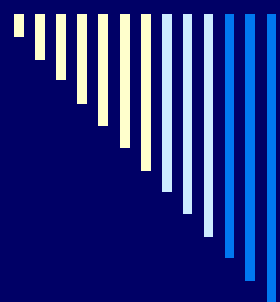
New and existing “small” boilers must have a biennial “tune-up.” Biennial = not more than 25 months apart. If the boiler is not operating in the 25th month, must perform tune-up within 1 week after startup.

Site-specific monitoring plan.



# Biennial Tune-Up

- ❑ Inspect the burner and clean or replace any burner components as necessary (may be delayed until next shutdown; must be performed at least once every 36 months)
- ❑ Inspect the flame pattern and adjust burner as necessary to optimize the flame pattern, consistent with manufacturer's specifications, if available.
- ❑ Inspect the system controlling air-to-fuel ratio and ensure it is correctly calibrated and functioning properly.
- ❑ Optimize total emissions of carbon monoxide, consistent with the manufacturer's specifications, if available.
- ❑ Measure the concentration of CO and oxygen before and after adjustments are made.
- ❑ Maintain and, if requested, submit to EPA a biennial report containing the before and after CO and oxygen concentrations, a description of any corrective actions taken as part of the tune-up and the type and amount of fuel used over the 12 months prior to the biennial tune-up.



## Existing Large Coal-Fired Boilers

Hg limit = 4.8 lbs/TBtu

Co limit = 400 ppm (at 7% oxygen)

One Time Energy Assessment

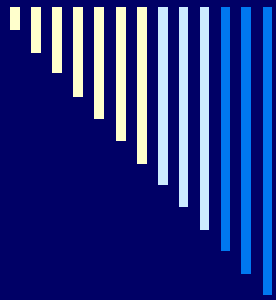
Limit time spent during startup and shutdown following manufacturer's recommended procedures

Site-specific monitoring plan



# One Time Energy Assessment

- ❑ Visual inspection of the boiler system.
  - ❑ An evaluation of the operating characteristics of the facility, specifications of energy using system, operating and maintenance procedures and any unusual operating constraints.
  - ❑ Inventory of major systems consuming energy from affected boilers.
  - ❑ A review of available architectural and engineering plans, facility operation and maintenance procedures and logs and fuel usage.
  - ❑ A list of major energy conservation measures.
  - ❑ A list of the energy savings potential of the energy conservation measures.
  - ❑ A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits and the time frame for recouping those investments.
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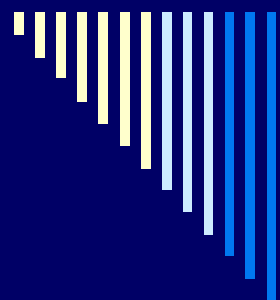


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An assessment that was completed on or after January 1, 2008 and that meets or is amended to meet the foregoing requirements may be used to satisfy the requirement to conduct a one time energy assessment.

There is no requirement to implement any recommendations from the one time energy assessment.

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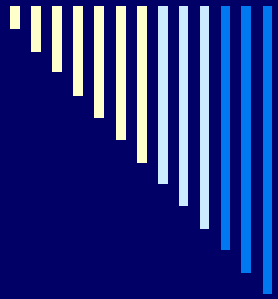


## Existing Large Biomass and Oil Boilers

No numeric emission limits

Biennial tune-up

One-time energy assessment



# New Large Coal Boilers

Hg limit = 4.8 lbs/TBtu

CO limit = 400 ppm (7% oxygen)

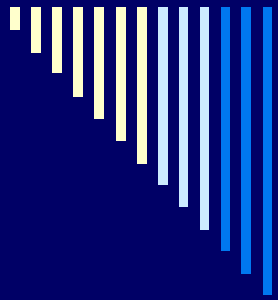
PM limit = 0.42 lb/mmBtu (boilers < 30 mmBtu/hr)

0.03 lb/mmBtu (boilers  $\geq$  30 mmBtu/hr)

No tune-up or energy assessment

Limit time spent during startup and shutdown following manufacturer's recommended procedures

Site-specific monitoring plan



## New Large Biomass Boilers

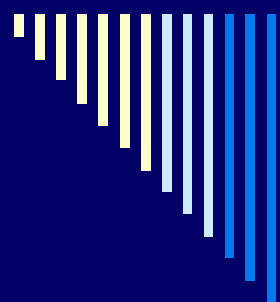
PM limit = 0.07 lb/mmBtu (boilers < 30  
mmBtu/hr)

0.03 lb/mmBtu (boilers  $\geq$  30  
mmBtu/hr)

Biennial tune-up

Site-specific monitoring plan

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## New Large Oil Boilers

PM limit = 0.03 lb/mmBtu (all large oil boilers)

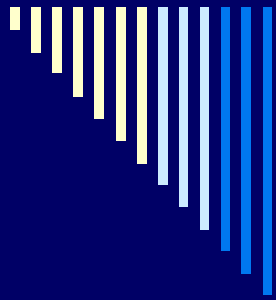
Biennial tune-up

Site-specific monitoring plan



## Quick Summary

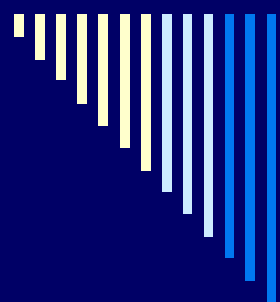
- ❑ All **small** boilers only have to have biennial tune-up
  - ❑ All **large existing** boilers have to have a one-time energy assessment
  - ❑ Only **large coal** boilers (both new and existing) have Hg or CO limits and requirement to limit time spend during startup and shutdown.
  - ❑ Only **new large** units (coal, oil and biomass) have PM limits
  - ❑ All boilers, **except** for **large coal** boilers, must have biennial tune-ups
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# Deadlines, Deadlines, Deadlines

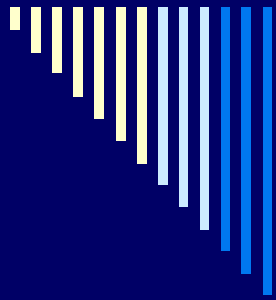
Any Existing Small Boiler (Coal, Oil or Biomass)

- ❑ 9-17-2011 = Initial Notification of Applicability
- ❑ 3-21-2012 = Complete Initial Tune-Up
- ❑ 7-19-2012 = Initial Notification of Compliance Status
- ❑ 4-21-2014 = Complete Second Biennial Tune-Up  
(within 25 months after initial tune-up)
- ❑ 3-1-2015 = First Compliance Certification Report (due  
March 1 every second year)



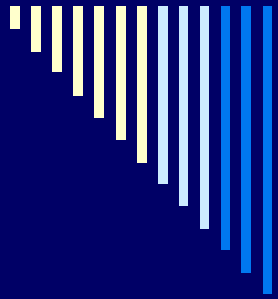
# Existing Large Biomass and Oil Boilers

- 9-17-2011 = Initial Notification of Applicability
- 3-21-2012 = Complete Initial Tune-Up
- 7-19-2012 = Initial Notification of Compliance Status
- 3-21-2014 = Complete One-Time Energy Assessment
- 4-21-2014 = Complete Second Biennial Tune-Up (within 25 months after initial tune-up)
- 7-19-2014 = Initial Notification of Compliance Status (for energy assessment)
- 3-1-2015 = First Compliance Certification Report (due March 1 every second year)



# Existing Large Coal Boilers

- 9-17-2011 = Initial Notification of Applicability
- 3-21-2014 = Complete One-Time Energy Assessment
- 7-19-2014 = Initial Notification of Compliance Status (for energy assessment)
- 9-17-2014 = Last date to conduct performance test for Hg and Co
- 11-16-2014 = Last date to submit performance test results for Hg and CO (due 60 days after test)
- 3-1-2015 = First Compliance Certification Report (due March 1 **every** year)
- 2017 = Performance test must be repeated every 3 years (37 months)



## New Small Boilers (any fuel)

Complete initial tune-up upon startup.

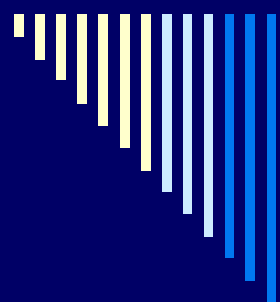
Initial notification of applicability and initial notification of compliance status due 120 days after startup.

Compliance certification due March 1 of the calendar year immediately following startup and then on March 1 every second year).



# New Large Boilers

- ❑ Complete initial tune-up upon startup (biomass and oil only)
  - ❑ Initial notification of applicability and initial notification of compliance status due 120 days after startup (biomass and oil only)
  - ❑ Performance test within 180 days after startup
  - ❑ Notification of compliance status within 60 days after performance test
  - ❑ Compliance certification due March 1 of the calendar year immediately following startup and then on March 1 **every** year)
  - ❑ Performance test must be repeated every 3 years (37 months)
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## Other Notification Requirements

- 30 days' prior notice is required before commencing or recommencing combustion of solid waste.
- 30 days' prior notice is required before switching fuels that may result in the applicability of a different subcategory or exemption from Subpart JJJJJJ due to a switch to 100% gas.
- There is an affirmative defense for malfunction, but it requires several actions to be taken including, among other things, a notification within two business days after the initial occurrence of the malfunction, and a 45-day follow up report.