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# EPA's Final Rules for Boilers, Incinerators & Solid Waste



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# Five Rules Finalized on February 21, 2011

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- NESHAP for Major Sources: ICI Boilers and Process Heaters.
- NESHAP for Area Sources: ICI Boilers and Process Heaters
- Identification of Non-Hazardous Secondary Materials that are Solid Waste.
- NSPS: Commercial and Industrial Solid Waste Incineration Units (CISWI)
- NSPS: Sewage Sludge Incinerators

# Major Source NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

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- 15 different subcategories of boilers and process heaters with requirements for each subcategory:
- All new and existing natural gas and refinery gas fired units will have work practice standards instead of numeric limits. Annual tune-ups will be required.
- Other gas fired units can demonstrate that they burn “clean fuel” as long as it is similar to natural gas and use the work practice standards.
- All other source categories must meet emission limits for PM, HCL, Hg, CO, Dioxin/Furan.

# Major Source NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

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- All 10 MMBtu/hr or less new and existing units will have work practice standards instead of numeric limits. Tune-ups are required once every 2 years.
- Limited Use Boilers will have work practice standards also with tune-ups once every 2 years. These units must operate less than 10% of the year as emergency and backup boilers.
- PM CEMs monitoring is required for units greater than 250 MMBtu/hr firing coal, biomass or residual oil.
- All units greater than 10 MMBtu/hr must monitor oxygen as a measure of good combustion.
- All other monitoring methods for various source categories include: pressure drops, opacity, bag leak detection systems, ph, sorbent injection rates etc....

# Major Source NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

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## KEY CHANGES FROM THE PROPOSED RULE

- Creates a solid fuel category instead of separate biomass and coal subcategories for PM, Mercury and HCL.
- Units burning gases other than natural gas and refinery gas can still use work practice standards if they demonstrate that their fuel is similar to natural gas.
- Added additional subcategories for combination suspension/grate burners, limited-use units and non-continental liquid units.
- Replaced emissions limits with work practice standards for new units <10MMBtu/hr and allows limited-use units to use same standards.
- Added work practice standards for periods of startup and shutdown rather than numeric limits.
- No health based emissions limits for acid gases.

# Area Source NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

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- The final rule establishes standards for mercury, particulate matter (PM) as a surrogate for non-mercury metals, and carbon monoxide (CO) as a surrogate for organics.
- The final rule covers boilers that burn coal, oil, biomass or non-waste materials. It does not cover gaseous fuels or any solid waste fuel regulated under Section 129 of CAA.
- Different requirements for “large” (>10 MMBtu/hr) and small boilers.

## NEW UNITS

- Coal units with heat input >10 MMBtu/hr must meet emissions limits for mercury, PM and CO.
- Biomass and oil units with heat input >10 MMBTU/hr must meet emissions limits for PM.
- Boilers <10 MMBtu/hr must perform a tune-up every two years.

# Area Source NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

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## EXISTING UNITS

- Coal units with heat input  $>10$  MMBtu/hr must meet emissions limits for mercury, and CO.
- Biomass units, oil units and small coal units are required to meet a work practice standard or a management practice by performing a tune-up every 2 years.

## KEY CHANGES FROM PROPOSAL

- Changed CO limits for biomass and oil-fired units from requiring MACT to GACT.
- Changed requirements for new small units to a work practice standard from emissions limits.

# Area Source NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

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## Startup, Shutdown and Malfunction

- Final rule requires work practice standards, to minimize the duration, during SU/SD for all new and existing units.
- Malfunction events are not exempt entirely. EPA therefore added an affirmative defense provision to the final rule for civil penalties for exceedances of emission limits that are caused by malfunctions

## Compliance Deadlines

- Existing sources subject to work practice or management practice standards have one year after publication date in the FR.
- Existing sources subject to an emissions limit or energy assessment have three years after publication date.
- New sources have 60-days after publication or upon startup.



# Identification of Non-Hazardous Secondary Materials that are Solid Waste.

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## Resource Conservation and Recovery Act (RCRA) Rule

- Non-hazardous secondary materials considered solid wastes are regulated under Section 129 of the CAA. Most non-hazardous secondary materials are considered solid wastes and when burned are subject to the CISWI NSPS.
- Non-hazardous secondary materials **not** considered solid wastes are regulated under Section 112 of the CAA. (ICI NESHAPs)

## Secondary Materials are NOT Solid Waste if they are LEGITMATE fuels:

- They remain within the control of the generator ;
- Scrap tires managed by established tire collection programs;
- Resinated wood used as fuel;
- Those that are used as ingredients
- Discards that have undergone processing to produce fuel or ingredient products; or
- Those that are used as fuels for which a non-waste determination has been granted

# Identification of Non-Hazardous Secondary Materials that are Solid Waste.

<b>Proposed Rule</b>	<b>Final Rule</b>
Scrap tires considered solid waste when combusted unless sufficiently processed.	Tires are a non-waste fuel if they are managed under the oversight of established tire collection programs.
Resinated wood is a solid waste if transferred off-site to someone else. Considered a non-waste fuel if combusted within the control of the generator.	Fuel must meet the legitimacy criteria whether or not in the control of the generator.
Coal refuse that was abandoned and then processed was considered a solid waste.	Abandoned coal refuse that is processed to lower contaminants and increase energy value is considered a non-waste fuel.
Traditional fuels were defined as coal, oil, natural gas (derivatives) and clean cellulosic biomass.	Added an “alternative fuels” category. (Coal refuse, on-spec oil used oil, and clean cellulosic biomass.) Traditional fuels are not secondary and not solid wastes unless discarded.

# NSPS and Emission Guidelines for Commercial and Industrial Solid Waste Incineration Units (CISWI)

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- A CISWI unit is any device that is used to burn solid waste at commercial or industrial facilities.
- Final rule covers four subcategories:
  - Incinerators
  - Energy recovery units
  - Waste burning kilns; and
  - Small incinerators in remote locations.  
(Burn-off ovens no longer regulated)
- Rule still has emission limits for nine pollutants:

• Mercury	Hydrogen Chloride	PM
• Lead	Dioxins/Furans	CO
• Cadmium	SO <sub>2</sub>	NOx

# NSPS and Emission Guidelines for Commercial and Industrial Solid Waste Incineration Units (CISWI)

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- These emission limits will require reductions for 85 of the 88 current sources.
- Existing Sources are defined as “currently subject to the NSPS” and New Sources are those units which commence construction after June 4, 2010, or modifications that commenced construction 6 months after promulgation.
- The final rule requires stack testing, monitoring (new sources have additional monitoring requirements), annual inspections of control devices, annual visible emissions test of ash handling, specific procedures for test data submittals.
- EPA expects most sources to find alternative waste disposal options (i.e. diverting waste to landfills).

# NSPS and Emission Guidelines for Sewage Sludge Incinerators (SSI)

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- Final rule covers two subcategories treating domestic sewage sludge: Multiple Hearth (MH) and fluidized bed (FB).
- Units incinerating sewage sludge at commercial, industrial and institutional facilities will be covered under a different standard.
- Rules establish emission limits for the same nine pollutants in the CISWI rule.
- There are provisions for testing, monitoring, recordkeeping, reporting and operator training.

# NSPS and Emission Guidelines for Sewage Sludge Incinerators (SSI)

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## Key Changes From Proposed Rule

- Clarified the applicability of the rule to only sources combusting sewage sludge at facilities treating Domestic Sewage Sludge.
- Revised the subcategories for new MH units to be consistent with the existing MH units.
- EPA determined that the proposed beyond-the-floor emission limits for mercury were no longer cost-effective and revised that section.
- No longer requires an Opacity standard for sources subject to parametric monitoring and annual testing.

# Notice of Reconsideration

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- EPA issued a Notice of Reconsideration for the ICI and CISWI rules.
- EPA is going to develop a reconsideration notice that identifies specific portions of the rules they feel further public comment is warranted.
- After review, they may also seek public comment on other areas of the rule based on any modifications they may propose.
- They will evaluate any petitions submitted requesting reconsideration of any aspect of the rules.
- Additional information can be found in the dockets for each of the rules at:  
<http://www.epa.gov/airquality/combustion/actions.html#feb11>



Questions?