

New Proposed Air Regulations for Boilers Will Require New Controls and Could Affect Biomass, Landfill Gas

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On June 4, 2010, the U.S. Environmental Protection Agency (EPA) issued three significant proposed regulations under the Clean Air Act (CAA) and one rule under the Resource Conservation and Recovery Act (RCRA) that will affect emissions of hazardous air pollutants from solid waste incinerators and from institutional, commercial, and industrial boilers and process heaters (indirect-fired) burning various fuels including coal, oil, natural gas, landfill gas, biomass, and biodiesel. EPA's proposed rules for boilers also will apply to certain fossil fuel-fired utility boilers that are under 25 megawatts and to all utility boilers firing a non-fossil fuel that is not a solid waste. The recently published rules include:

1. National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (*Major Source Boiler MACT*), 75 Fed. Reg. 32,006 (June 4, 2010);
2. National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers (*Area Source Boiler Rule*), 75 Fed. Reg. 31,896 (June 4, 2010);
3. Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units (*CISWI Rule*), 75 Fed. Reg. 31,938 (June 4, 2010); and
4. Identification of Non-Hazardous Secondary Materials That Are Solid Waste (*RCRA Solid Waste Definition*), 75 Fed. Reg. 31,844 (June 4, 2010).

While the stringent hazardous air pollutant limits in these proposed regulations will have significant cost impacts on owners of coal-fired and oil-fired boilers and process heaters, they also could have the effect of discouraging the future use of biomass, landfill gas, and other biomass-derived fuels in boilers. The comment deadline for all proposed rules was recently extended to August 3, 2010.

BACKGROUND

Section 112(d) of the CAA requires EPA to establish maximum achievable control technology (MACT) standards for major sources of hazardous air pollutants (HAPs). Major sources are those that emit more than 10 tons per year (tpy) of any one HAP or 25 tpy of HAPs in the aggregate. For purposes of setting MACT



standards, EPA has grouped facilities into source categories, which consist of facilities engaged in a common activity.

Under the CAA, the MACT standard for existing sources must be at least as stringent as the “MACT floor,” the average emission level of the best-performing 12 percent of sources in the source category. EPA can impose requirements that are more stringent than the MACT floor, referred to as “beyond the floor” requirements, but must take cost, energy, and other environmental impacts into consideration when doing so. For new sources, EPA is required to set the MACT standard at the level achieved by the best performing similar source in the source category.

EPA first issued a final rule setting MACT standards for institutional, commercial and industrial boilers at major sources on September 13, 2004. Shortly thereafter, EPA re-issued a rule under section 129(a)(1)(D) of the CAA (a provision similar to section 112 but specific to solid waste combustion sources) establishing definitions for “solid waste,” “commercial and industrial waste,” and “commercial and industrial solid waste incineration” (CISWI Rule). Units that combust certain types of solid waste not covered by the CISWI Rule were covered by the Boiler MACT.

Both the earlier Boiler MACT and the earlier CISWI Rule were challenged by environmental groups, industry groups, and municipalities, and were vacated by the D.C. Circuit. EPA is under court order to complete a final Boiler MACT rule by December 16, 2010.

PROPOSED RULES

1. The proposed *Major Source Boiler MACT* would impact HAP emissions from industrial, commercial and institutional boilers burning various fuels including coal, oil, biodiesel, natural gas, landfill gas, and biomass¹ as follows:
 - Establish work practice standards (instead of emission limits) requiring an annual tune-up for new and existing natural gas- and refinery gas-fired units with a heat input capacity over 10 million Btu per hour.
 - Establish work practice standards requiring a tune-up every two years for all existing units with a heat input capacity of less than 10 million Btu per hour.
 - Establish stringent emission limits for all other existing and new boilers and process heaters located at major sources, including separate limits for mercury, dioxin/furan, particulate matter (as a surrogate for non-mercury metals), hydrogen chloride (as a surrogate for acid gases), and carbon monoxide (as a surrogate for

¹ The proposed definition of “biomass fuel” is very expansive and includes such materials as wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sanderdust, chips, scraps, slabs, millings, and shavings), animal manure, vegetative agricultural and silvicultural materials (e.g., logging residues, prunings, nut and grain hulls and chaff, bagasse).



non-dioxin organic air toxics). Emission limits would apply at all times, including periods of startup, shutdown and malfunction.

- Require all sources with existing boilers and process heaters to conduct a one-time energy assessment or audit to identify cost-effective energy-saving measures. (EPA proposes to define “cost-effective” as an investment with a payback period of two years or less.) EPA is taking comment on whether to require sources to implement identified measures.

EPA is proposing that existing units be in compliance with the requirements within three years of the date the final rule is published in the *Federal Register*.

2. The proposed **Area Source Boiler Rule** would impact HAP emissions from industrial, commercial and institutional boilers at sources below the major threshold (10 tpy of any one HAP or 25 tpy in the aggregate) burning coal, oil, and biomass. Natural gas-fired boilers, as well as those fired by landfill gas, are not included in the industry source category covered by the proposed Area Source Boiler Rule. The proposal would impact affected units as follows:

- Require new coal-fired, biomass, and oil-fired units to meet emission limits at all times for particulate matter and carbon monoxide. New coal-fired units also would be required to meet emission limits for mercury at all times.
- Require existing coal-fired, oil-fired, and biomass large boilers (those with a heat input capacity of greater than or equal to 10 million Btu per hour) to meet emission limits for carbon monoxide at all times. Coal-fired units also would be required to meet limits for mercury at all times.
- Require small boilers to perform a boiler tune-up every two years.
- Similar to the proposed Major Source Boiler MACT, require all area source facilities with existing large boilers to conduct an energy audit to identify cost-effective energy-saving measures.

EPA is proposing that existing units be in compliance with the requirements within three years of the date the final rule is published in the *Federal Register*.

3. The proposed **CISWI Rule** would:

- Cover a number of subcategories, including incinerators, energy recovery units, waste burning kilns, burn-off ovens, and small, remote incinerators that burn solid waste.
- Establish stringent emission limits for CISWI units for mercury, lead, cadmium, hydrogen chloride,



particulate matter, carbon monoxide, dioxins/furans, nitrogen oxides, and sulfur dioxide.

- Require stack testing and monitoring for newly regulated subcategories and annual inspection of emission control devices.

The proposed rule would require states to submit revised State Implementation Plans (SIPs) within one year after the date that EPA promulgates revised standards. Existing CISWI units would be required to demonstrate compliance with the revised standards as expeditiously as possible after approval of a SIP, but no later than three years from the date of approval of the SIP or five years after promulgation of the revised standards, whichever is earlier.

4. The proposed ***RCRA Solid Waste Definition Rule*** would provide that the following non-hazardous secondary materials burned as fuels or used as ingredients are ***not*** considered “solid waste.” Units combusting these materials would be subject to the Boiler Rules, while units combusting “solid waste” would be subject to the CISWI Rule, which has more stringent limits for a number of pollutants:
 - Material used as a fuel that remains within the control of the generator and that meets certain legitimacy criteria;
 - Material used as an ingredient in a manufacturing process that meets certain legitimacy criteria;
 - Previously discarded material that has been sufficiently processed to produce a fuel product or an ingredient product that meets certain legitimacy criteria; or
 - Material used as a fuel for which EPA has granted a petition for a “non-waste” determination.

ISSUES WITH PROPOSED RULES AND IMPLICATIONS

If finalized as proposed, EPA’s air rules will have a significant impact on those industry sectors using boilers that burn coal, oil, biodiesel, landfill gas, or biomass by requiring compliance, ***at all times***, with stringent emission limits. No special considerations are built into the proposed standards for periods when the boiler or process heater is malfunctioning or in a startup or shutdown mode. Thus, emissions from upsets can drive a unit out of compliance with the limits.

While EPA is proposing work practices for natural gas and refinery gas-fired boilers and process heaters at major sources, boilers burning other gaseous fuels, such as landfill gas, will be required to meet stringent emission limits, potentially discouraging the further use and development of this resource. Units burning biomass also will be required to meet stringent emission limits, which may impede the continued beneficial use of wood products and wood residue.



The database used by EPA to set the emission limits shows that the lowest emitting units in the various fuel categories cannot meet all the proposed emission limits simultaneously. Thus, EPA's proposed emission limits do not appear to be achievable even by those units that are the best controlled or using fuels that are low in hazardous air pollutants.

EPA's proposal to require a one-time energy assessment also is a noteworthy element of the proposed Boiler Rules. Not only would the energy audit be required for every existing boiler, but it also would require the owner to identify energy conservation measures for a *facility*, requiring the owner to look beyond the boiler itself into the steam and process heating systems of the facility. Some view the proposed energy assessment as an early attempt by EPA to impose efficiency requirements that could later be used as a model for greenhouse gas reduction measures in the permitting context. At this point, however, EPA has not proposed (but is taking comment on) requiring sources to implement measures identified in the audit that are "cost effective."

One final consideration is that EPA has publically announced that it plans to use the same MACT approach for larger coal and oil-fired utilities as for the Boiler Rules. That is, EPA's approach to setting the Boiler MACT limits, limited use of surrogates, and coverage of all HAPs is a preview of how the agency plans to handle the upcoming HAP standards for utilities due to be proposed in March 2011.

FOR ADDITIONAL INFORMATION

Van Ness Feldman closely monitors and counsels clients on air and waste regulatory developments. If you would like more information about the proposed Boiler Rules or assistance with participation in these rulemakings, please contact Britt Fleming, Stephen Fotis, Mitch Bernstein, or any member of the firm's Environmental practice at (202) 298-1800.

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