



North Carolina Department of Environment and Natural Resources
Division of Air Quality

Beverly Eaves Perdue
Freeman
Governor

Sheila C. Holman

Director

Dee

Secretary

July 15, 2011

Docket No. EPA-HQ-OAR-2002-0058
Environmental Protection Agency (EPA)
Mailcode: 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Subject: Reconsideration Comments on Rulemaking – Industrial, Commercial, and Institutional
Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants
(NESHAP) for Major Sources

Dear Sir/Madam:

The North Carolina Division of Air Quality (NC DAQ), within the Department of Environment and Natural Resources (DENR), appreciates the opportunity to provide reconsideration comments on the rule “Industrial, Commercial, and Institutional (ICI) Boilers and Process Heaters NESHAP for Major Sources” published in the *Federal Register* on March 21, 2011 (76 FR 15608). EPA then issued a stay on May 11, 2011 to delay the effective date of this and another related standard to seek additional public comment before requiring thousands of facilities across multiple industries to make investments based on standards that may change after this information is fully reviewed. The Clean Air Act (CAA) requires EPA to set NESHAPs for major stationary sources based on the maximum achievable control technology (MACT) performance.

Rulemaking on combustion sources, such as the ICI Boilers and Process Heaters Proposed MACT Rule (hereafter Proposed Boiler MACT), has been an important focal point for over 20 years for NC DAQ. Our state toxics rules on combustion sources require an assessment every 5 years of existing exempt combustion sources to assess and manage the health risk. Risk assessment and management becomes a delicate balancing act in attempting to achieve equilibrium among energy, environmental, economic, and public health concerns. The Boiler MACT clearly will become one of EPA’s most profound and controversial rulemakings with widespread effects for several reasons, including:

- Such rulemaking involves compelling issues and competing interests trying to balance energy, environmental, economic, and health concerns.
- Boilers are the most common energy-producing workhorses for most industries. Nationally, the Rule will affect over 13,500 boilers across most major industries.
- The Rule would produce significant air quality health benefits of \$22-\$54 billion annually.
- The cost impact to affected industries would likewise be large, totaling \$1.4 billion annually.

The NC DAQ supports many aspects in the Boiler MACT and appreciates the challenge EPA faces in reaching a final decision on the rule. We are familiar and concerned with boiler emission issues on the cost-effective extent of control, HAP measurement data quality, and the effects on public health and risk

assessment. We respectfully submit the following comments on two key issues that benefit the needs of the states as well as the EPA.

1. Revisions to the proposed subcategories in the major source boilers rule.

Heat Input Size Threshold of 10 million (MM) Btu/hr

We agree with EPA that small boilers meet the technical and economic limitations as specified in CAA 112(h)(1). We also believe that a threshold higher than 10 MM Btu/hr would also meet the technical and economic limitations as specified in CAA 112 (h)(1) and reduce the adverse economic impact on facilities with small units. On average, EPA estimates annualized compliance cost of:

- > \$830,000 per unit for solid fuel-fired units, and
- > \$1,800,000 for liquid fuel-fired units.¹

We recommend EPA use available data, and collect more if necessary, to further evaluate the technical feasibility and economic impacts of the proposed rules for the 10-30 MM Btu/hr size subcategory. This suggestion is further supported by questionable emission measurement methodology for small boilers.

EPA should consider extending its threshold of 10 MM Btu/hr up to 30 MM Btu/hr for proposing a work practice standard under the CAA Section 112(h) requiring an annual tune-up for existing boilers and process heaters combusting conventional fuels. The basis of this position is:

1. Small units produce proportionally less HAP emissions than larger units.
2. The value of the money spent for compliance for small units (<30 MM Btu/hr) would be better utilized in reducing emissions in other applications.
3. There is a limited capacity of the air pollution control and construction industries in the US to service the 13,555 Boiler MACT affected facilities. It would be wise for EPA to assure that the most significant, larger facilities are serviced first on a priority basis before regulating the 7,400 small units.
4. Many small boilers are not equipped with the infrastructure (sampling ports, safe platform, stairway/steps, and electric power) to accommodate valid emission measurements. Acquiring this infrastructure would cost \$40,000 to \$80,000 for each unit; this infrastructure adds to the cost of the rule, but does not by itself reduce HAP emissions.
5. Furthermore, EPA's emission test equipment for PM and related HAPs (mercury and dioxins) is suitably designed primarily for exhaust streams large enough where measurements are not made obtrusively.² However, EPA's test equipment is not suitably designed for exhaust flow rates from small boilers (with less than 1-2 foot diameter stacks or ducts). The rule would require compliance testing for 6 entities (PM, HCl, Hg, CO, dioxins, and gas velocity) consisting of up to 6 sampling probes including a pitot tube. While the rule does not require it, simultaneous measurements of all six would be highly advantageous because of cost, time, process stability, quality assurance, and enforceability considerations. Despite the advantages, there is a lower heat

¹ EPA Boiler MACT, Table 3, FR p. 15651.

² See 40 CFR Part 60, Appendix A, Method 1, Section 2.3.1.2, and Method 1A, particularly Section 2.2. "In these small diameter stacks or ducts, the conventional Method 5 stack assembly (consisting of a Type S pitot tube attached to a sampling probe, equipped with a nozzle and thermocouple) blocks a significant portion of the cross-section of the duct and causes inaccurate measurements. Therefore, for particulate matter (PM) [and for HCl, mercury, and dioxins] sampling in small stacks or ducts, the gas velocity is measured using a standard pitot tube downstream of the actual emission sampling site. The straight run of duct between the PM sampling and velocity measurement sites allows the flow profile, temporarily disturbed by the presence of the sampling probe, to redevelop and stabilize."

input size limit for which compliance testing with simultaneous measurements of all 6 entities “is not practicable due to technological and economic limitations.” We advise EPA to investigate the lower size limit below which unobtrusive measurements are not practical using the prescribed methodology for simultaneous measurements of the 5 regulated pollutants in small ducts. Given this issue, it is pointless to impose multiple-pollutant emission standards for small sources whose measurement might typically produce erroneous or questionable data, as such requirements would be problematic to support, defend and enforce.

6. EPA has the authority to prescribe a work practice standard instead of a numeric emissions limit under Section 112(h)(2)(B). This provision authorizes EPA to establish work practice standards when “the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.”

Heat Input Size Segregated Solid Fuel Standards

In the proposed rule, the only sub-categorization based on heat input size is a 10 MM Btu/hr threshold. The proposed MACT for existing sources greater than 10 MM Btu/hr includes add-on control devices such as scrubbers, ESPs, sorbent injections systems, etc., which have significant capital and operating costs. The cost and cost-effectiveness (dollars per emission amount reduced) is highly dependent on heat input size, and larger combustion sources are more controlled than smaller sources. This fact is manifested by EPA’s New Source Performance Standards Subpart Dc for Industrial Boilers. While it may be technically- and economically-feasible to install a wet scrubber on a large 250 MM Btu/hr coal fired-boiler, the cost of such control on a small 15 MM Btu/hr boiler is not economically feasible for most facilities. To avoid forcing small units to retrofit add-on controls that are not cost-effective, NC DAQ recommends EPA develop a Boiler MACT regulatory structure similar to 40 CFR 60, Subpart Dc³ with progressively more stringent emission standards relative to increases in boiler heat input.

EPA should consider further subcategorizing the MACT standards based on heat input size for solid fuel fired boilers and heaters. In order to evaluate and help justify further sub-categorization, EPA should:

1. Size-segregate the source populations.
2. Rank HAP emissions by sources for each size category.
3. Identify the emission control technologies in each category.
4. Characterize the extent of existing emission controls in each category.
5. Estimate the cost-effectiveness of adding emission controls for each category.
6. Rank each category’s control cost-effectiveness for each HAP category.

Wet and Dry Biomass Subcategorization

EPA should consider further subcategorizing biomass fired units to include the basis of green (or wet) and dry fuels. Test data submitted by boiler sources in NC to DAQ show that PM emissions from dry wood (<20% moisture) combustion can be up to 20-50% higher than emissions from the combustion of green wood. In North Carolina, dry wood is burned in smaller boilers (<50 MM Btu/hr) in wood working industries, including furniture manufacturing. Green wood combustion sources include larger boilers (>250 MM Btu/hr) in lumber mills and pulp and paper plants that are more highly controlled. NC DAQ has reason to assert the dry wood-fired units and green wood-fired units are sufficiently different based on emissions and level of control to warrant additional sub-categorization.

³ Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

2. Revisions to the proposed dioxin emission limit and testing requirement.

EPA should consider eliminating the dioxin emission limits and set work practice standards as proposed in the Electric Utility Generating Unit (EGU) MACT.⁴ EPA has the authority to prescribe a work practice standard instead of emission limits under Section 112(h)(2)(B). This provision authorizes EPA to set work practice standards when “the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.” These standards were set without EPA documenting, and providing guidance on, the factors affecting control of dioxin emissions from industrial boilers. In addition, the measurement uncertainty associated with dioxin emissions at the low levels from industrial boilers makes standard setting *and* enforcement problematic. The proximity of the dioxin emission standard to the detection limit makes testing for compliance impracticable and unreliable. As proposed in the EGU MACT, a work practice standard to ensure good combustion practice is reasonable to control dioxin emissions.

3. Development of Control Techniques Document

Previously EPA issued technical documents which identified alternative emission controls for all categories of stationary sources to provide information to State and local air pollution control agencies. These documents were to be subsequently revised and updated. The alternative control techniques document provided technical information for State and local agencies to develop and implement regulatory programs to control emissions that subsequently required EPA approval. DAQ suggests EPA issue a similar document for controlling HAP emissions for the Boiler MACT.

We sincerely appreciate your consideration of these comments. If we can be of assistance regarding these comments, please contact Mr. Steve Schliesser of my staff at 919-715-2694 or at steve.schliesser@ncdenr.gov.

Sincerely,



Sheila C. Holman

SCH/ss

c:

Dee Freeman, Secretary, Department of Environment and Natural Resources
Robin Smith, Assistant Secretary for Environment

⁴ Proposed May 3, 2011 under 76 FR 24976.