

August 20, 2010

Mr. Gilbert Wood
USEPA/Office of Air Quality Planning & Standards
109 T.W. Alexander Drive, Mail Code: C404-05
Research Triangle Park, NC 27709

RE: Revisions to Residential Wood Heater NSPS

Dear Mr. Wood:

The member states of NESCAUM strongly support a revision to U.S. Environmental Protection Agency's (EPA's) Residential Wood Heater New Source Performance Standard (NSPS). Wood combustion is an important contributor to fine particulate matter in the Northeast, and science has clearly established causal associations between fine particles and the aggravation of respiratory conditions such as asthma, cardiac conditions such as heart disease, and premature mortality. Recent emissions inventories indicate residential wood combustion represents 25 percent of primary fine particulate emissions in the Northeast.

Significant improvements have been made worldwide in wood combustion technology since EPA's current NSPS requirements were phased-in more than 20 years ago. The lack of a modern regulatory driver to keep pace with the technology improvements has limited their introduction in the United States.

There are significant additional issues with the existing out-dated standards, including the broad spectrum of unregulated device types currently in or about to enter the market. Key issues that the NESCAUM states would like addressed in a revision to the NSPS are detailed in this letter, and include: (1) the types of units regulated under the NSPS; (2) pollutants covered under the standard; (3) fuel types; (4) test methods; (5) third party methods; (6) compliance assurance; (7) level of the NSPS; (8) the form of the NSPS; and (9) current inventory of existing residential wood burning devices.

We offer the following suggestions as a constructive contribution to a shared concern between EPA and the NESCAUM states. Ultimately, we believe that improving wood heater technologies to reduce emissions of pollutants and improve energy efficiency will be good for human health, good for the environment, and good for promoting increased use of wood fuel and decreased use of non-renewable and imported sources of energy.

1. Units Regulated under the NSPS

The universe of devices regulated under the NSPS is of critical concern to the NESCAUM states. Currently, the regulation exempts broad categories of devices, including fireplaces, masonry heaters, pellet stoves, outdoor/indoor wood boilers, and outdoor/indoor wood furnaces. NESCAUM urges EPA to ensure that the NSPS rulemaking includes emission standards for all residential wood burning devices. In addition, NESCAUM supports efforts to eliminate source category loopholes,

thus ensuring that all residential wood heating devices are required to meet an emission standard. Furthermore, NESCAUM strongly supports a rule that creates mechanisms to push innovation across devices types (i.e., technology transfer).

To this end, NESCAUM requests that EPA consider the following strategies:

- Move away from regulations based on definitions of device type;
- Develop emission standards based on heat delivered and feeding mechanism, such as those used in the European regulatory model (a suggested format is provided below in Table 1);
- Develop standards that incorporate all solid fuel devices across source categories, without exemptions based on size.¹

Table 1. Proposed Regulatory Construct

<i>Delivered Heat (Btu output)</i>	<i>Automatic feed</i>	<i>Hand feed</i>
<i><8,000 Btu</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>
<i>8,000-35,000 Btu</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>
<i>35,001-120,000 Btu</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>
<i>120,001 – 200,000 Btu</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>
<i>>200,000 Btu</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>	<i>x lb/mmBtu heat output No run to exceed y g/hr</i>

Recommendations

- Regulate based on operating parameters rather than device definitions;
- Eliminate variation in emission standards for catalytic and non-catalytic units
- Develop emission standards for the entire source category;
- Expand the NSPS for industrial, commercial, and institutional (ICI) boilers to cover all boilers, regardless of size.

2. Pollutants Covered Under the Standard

Wood combustion emits a variety of pollutants of concern, many of which have been shown to produce acute and chronic biological effects. The abundance of fine particulates in wood smoke presents perhaps the most serious health risk. Wood smoke, however, also contains numerous other chemicals, including carbon monoxide (CO), nitrogen and sulfur oxides (NO_x and SO_x), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), chlorinated dioxins, and mercury. In Europe, emission standards for wood combustion devices go beyond PM, requiring units to meet emission limits for CO, NO_x, PM, VOCs, and combustion efficiency. Combining a multi-pollutant approach with a thermal combustion efficiency standard creates significant co-benefits,

¹ For devices that nominally deliver no heat, such as fireplaces or other aesthetic devices, an appropriate alternative to establishing an NSPS based on heat delivered would be to establish a mass-based output limit, such as grams per hour. An input-based standard (e.g., fuel energy consumed over time) for these types of devices would be inappropriate.

including reduced emissions, ensuring no trade-offs among pollutants (e.g., decreasing CO emissions to very low levels while increasing NO_x emissions), and reduced fuel consumption. Therefore, NESCAUM recommends that EPA develop emission standards for residential wood heaters beyond particulate matter to include, at a minimum key, the pollutants CO, VOCs, and PAHs.

Given the federal government's recent actions to reduce pollutants that impact climate change, NESCAUM also strongly recommends the EPA develop emission limits in this NSPS for both CO₂-equivalent (CO₂e) and black carbon. Black carbon can have a significant atmospheric warming effect. It has been estimated that applying existing technologies could reduce black carbon by 50 percent, enough to offset the warming effects of one to two decades of CO₂ emissions.² About 90 percent of black carbon emissions come from the consumption of fossil fuels and the burning of wood and other biomass. Therefore, the NESCAUM states strongly urge EPA to create CO₂e and black carbon emission standards in this revision of the NSPS.

Recommendations

- Establish standards as mass emissions per unit time for other criteria and air toxic pollutants to include CO, VOCs, and PAHs.
- Establish emission limits for CO₂e and black carbon.

3. Fuel Types and Various Devices

Today, there are a wide variety of devices that use solid fuels other than wood, such as coal, corn, and switchgrass. In order to ensure public health and environmental protection, EPA must require that all solid fuels used for residential heating meet an emission standard. Doing so would provide a level playing field among the various devices and fuels. It is also critical that EPA develop regulations covering all devices regardless of type of fuel.

NESCAUM requests that EPA consider the following:

- Ensure that dual fuel units are fully tested for emissions from all possible fuels.
- Expand the regulatory list to include all solid fuels, including coal.
- Develop fuel specifications for manufactured fuels, e.g., wood pellets.

Recommendations

- Expand the residential wood heater NSPS to include *all* solid fuels (including biomass, wood pellets, coal).
- Develop policies and guidance for testing dual fuel units.
- Develop fuel specifications for biomass fuels.

4. Test Methods

Critical to ensuring clean burning units is the use of appropriate test methods that challenge a unit to perform at its best under a variety of conditions. While the current program uses a certification method in lieu of on-site stack testing to assure compliance, any test performed by the facility for

² Wallack, J.S. and V Ramanathan. *The Other Climate Changers: Why Black Carbon and Ozone Also Matter*, Foreign Affairs, 88(5): 105-113 (2009).

certification purposes must conform with the conditions required under other NSPS rules. EPA's own stack testing guidance states the following:

Facilities are responsible for ensuring compliance with the emission limits under all conditions. Therefore, any stack test that is conducted must demonstrate that a facility is capable of complying with the applicable standards at all times. As a result, a facility should test under the most severe conditions that create the highest emissions. For example, if operating at maximum capacity would result in the highest levels of emissions, the facility should conduct a stack test operating at maximum capacity or allowable/permitted capacity. In addition, the facility should use the highest emitting fuel for the pollutant tested or as otherwise justified, and should process material that causes the highest emissions.

Therefore, test methods used for compliance under this NSPS should meet the following criteria:

- Emission limits should be based on worst case, rather than average, emissions.
- The test should simulate worst case conditions that the unit could be operated in the field without destroying the unit. This includes burn rates and fuel types.
- The fuel used should represent the most polluting fuel a homeowner could potentially use.

Recommendations

- The test must represent worst case emission scenarios, including burn rate and fuel type.
- The test should simulate all operations that are feasible in the real world.
- The test should continue to measure total particulate matter.
- The test method should be standardized as much as possible across device types, using the same fuel, fuel configurations, and burn categories.

5. Use of Third Party Test Methods

The NESCAUM states recognize that EPA is under Executive Order to review and adopt, when appropriate, third party test methods. The NESCAUM states, however, have significant concerns with the wholesale adoption of these methods for several reasons. First and foremost, many state agencies have limited ability to participate in processes developing these methods, due to either resource constraints or intellectual property policies of third party groups. Second, it is prudent public policy that any regulatory test method be scrutinized and issued by the regulator, rather than allow the regulated community to develop the test method unchecked.

Recommendation

- EPA should scrutinize any third party methods, review the findings, and discuss with states, locals, and other potential regulators prior to making recommendations on their potential use in the regulatory setting.

6. Compliance Assurance

NESCAUM is aware that many industry stakeholders are interested in developing an alternative certification procedure for this NSPS. The NESCAUM states support the current EPA Office of Enforcement and Compliance Assurance (OECA) review and certification process, and would not support any significant changes or alternatives. If the industry stakeholders have concerns with

EPA's current process, those concerns should be brought to EPA's attention and addressed; they should not be the basis for eliminating the certification process and moving to an unproven program for emission standards verification. EPA is required to ensure compliance with its regulations. Given the current economic situation and states' resource constraints, such proven programs are needed now, more than ever. In addition, the NESCAUM states are deeply concerned about the lack of oversight and follow-up on testing of units as defined in the current NSPS. Therefore, NESCAUM strongly urges that EPA provide additional resources and oversight for this program in the future.

Recommendations

- Continue with the process of OECA review and approval of certifications.
- Work with manufacturers to address concerns.
- Only allow third party processes for voluntary programs, and audit results to determine their effectiveness.
- Incorporate electronic reporting and streamline efforts for providing data to EPA to increase the efficiency of program oversight.
- Increase OECA's oversight and audit efforts for this rule.

7. Determining the Levels of the Standards

The NESCAUM states fully support EPA's efforts to look at technology and emission levels throughout the world. NESCAUM encourages EPA to review and determine Best Demonstrated Technology (BDT) levels in Europe, where lower emission standards have resulted in significant improvements in emissions performance.

8. Consistent and Protective Forms of the Standards

NESCAUM supports use of a common metric across the variety of devices that would be regulated under this program. A common standard metric, combined with a common test method, allows the consumer to compare emissions performance across different units within a class as well as emissions between different types of devices. Furthermore, the NESCAUM states support the use of a blended emission standard, such as the one currently used in the NSPS and the one used in EPA's Phase 2 voluntary program for Outdoor Wood-fired Hydronic Heaters. A blended standard that combines pollution generated by heat delivered along with the amount of pollution over a unit of time allows not only for a comparison of emissions based on heat delivered, but also, more importantly, the measured mass emitted over time. This can allow EPA to model emissions and develop standards that ensure that public exposures will be minimized regardless of the device type. Given that these units are placed in residential situations, and there may be multiple units in a local airshed, it is critical that EPA develop emission standards that ensure, at minimum, that the public will not be exposed to unhealthy air pollution levels. NESCAUM therefore recommends that EPA conduct a modeling assessment to ensure that a revised emission standard will not result in local exposures at levels above a National Ambient Air Quality Standard (NAAQS). Given recent movement towards incentives for energy efficient units so that wood is not being wasted, the NESCAUM states also urge EPA to develop a standardized efficiency test method and a performance level under a revised NSPS.

Recommendations

- Use a common metric for emission standards across device types.
- Use a hybrid emission standard that incorporates pollution generated per unit of heat delivered and pollution generated over a period of time.
- Ensure that standards will not result in exposures above a NAAQS.
- Develop a standardized efficiency test within the revised NSPS.
- Establish (separate) minimum performance standards for combustion efficiency and for heat delivery.

9. Current Inventory

One the largest challenges faced by state agencies are the emissions from the current inventory of residential wood burning devices, which include unregulated devices and pre-NSPS woodstoves. NESCAUM urges EPA to expand current change-out efforts with respect to the size and scope of the targeted devices, such that change-out programs include other residential wood burning devices with outmoded technologies.

If we can provide any additional information or help in any way, please contact myself or our lead staff person, Lisa Rector, at 802-899-5306.

Sincerely,



Arthur Marin, Executive Director
NESCAUM

cc: NESCAUM Directors