



EPA Docket Center
EPA West (Air Docket)
Attention Docket ID number:
EPA-HQ-OAR-2009-0734
U.S. Environmental Protection Agency
Mailcode: 2822T
1200 Pennsylvania Ave. NW
Washington, DC 20503

May 1, 2014

Dear Sir or Madame,

The Western States Air Resources (WESTAR Council, an association of 15 western state air quality agencies, appreciates the opportunity to comment on the proposed *Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces, and New Residential Masonry Heaters* (NSPS). In some western states, including Alaska, burning wood is the most economical and practical means for residents to heat their homes, particularly in remote areas or communities with high energy costs. Because of the importance of wood heating in these areas, it is critical that EPA's rulemaking provide a balance that allows for the continued economic use of wood heat while making gains to reduce air pollutant emissions to levels safe to human health. The comments that follow are the views of all the WESTAR member states, except South Dakota and Alaska. Alaska concurs with portions of this letter particularly the proposals for Step 1, developing testing methods and labeling devices. Alaska and some of the other WESTAR member states will also be commenting separately on the proposal related to their state's unique needs and circumstances.

Since 2008, WESTAR has advocated for revisions to the NSPS to expand the scope of appliances covered by the NSPS and tighten the standards for currently covered appliances. We are pleased that EPA has proposed changes to existing regulations that will accomplish both these objectives.

WESTAR believes that EPA should establish standards based on the Best System of Emission Reduction (BSER) and that the standards should be implemented as expeditiously as practicable. Residential wood heating appliances remain in homes for many years. It is critically important that the public have ready access to the cleanest burning affordable technology so that when they purchase a new or replacement appliance it meets a high level of emission performance.

This is particularly important in airsheds dominated by residential wood smoke that may already have unhealthy air. State and local air quality management organizations are required by the Clean Air Act to develop regulatory programs for these communities to mitigate the adverse health consequences of residential wood heating. The alternatives are often limited to curtailment programs when air quality deteriorates and stove change-out programs to replace non-certified appliances with certified ones. In some areas temperature inversions during the winter, when people rely most on wood to heat their homes, keeps wood smoke close to the ground creating greater health risks from PM_{2.5}. In the long run, a federal appliance certification program is the most cost-effective method for reducing residential wood heating pollution.

A growing body of evidence has demonstrated that particulate emissions from residential wood combustion, among other sources, have significant health effects at lower ambient concentrations than was apparent when the NSPS was first developed. Advances in our understanding of the adverse health consequences of fine particulate has resulted in a lower PM_{2.5} NAAQS standard and it could very well be that the future will see further tightening of the PM_{2.5} NAAQS. Since the Residential Wood Heating NSPS was promulgated in 1988, advances in residential wood burning technology make it possible for these sources to contribute more to cleaning up airsheds across the country.

Some WESTAR states have long struggled with pollution from residential wood combustion. Control strategies put in place over the years have enabled some areas to come into compliance with the PM NAAQS. However, there are new areas for which control programs for residential wood heating are under development to address violations of the PM_{2.5} NAAQS. It is difficult, particularly without up-to-date NSPS, for local governments to simultaneously address concerns that restrictions on wood burning will prevent some people from being able to economically heat their homes while assuring others that their health won't be impacted by PM_{2.5} concentrations where wood burning is more prevalent. The best solution is cleaner burning appliances. In the absence of more stringent national standards, state air quality agencies will continue to adopt more stringent measures than the current, but out-of-date NSPS, including appliance testing and certification programs. A sufficiently stringent uniform federal new appliance certification program will benefit manufacturers who otherwise may need to make separate compliance demonstrations in more jurisdictions. Finally, it will relieve a number of states and counties from the risk of Clean Air Act sanctions and other adverse economic impacts relating to non-attainment.

The focus of our comments are on residential wood (room) heaters, the implementation schedule and testing requirements, hydronic heater standards and some of the labeling provisions. We are not commenting on the laboratory accreditation, or appliance certification process. We will also not be commenting on masonry heaters as they are a relatively small segment of the market.

New Residential Wood Heaters

Wood Stoves and Fireplace Inserts

We recommend that instead of a ‘Step 1’ standard of 4.5 g/hr for variable heat output stoves and fireplace inserts, EPA adopt the Washington State standard (4.5 g/hr non-catalytic, 2.5 catalytic¹). This standard has been in place since 1995 and many products currently meet that standard. Additionally, we do not believe that currently certified new appliances with a higher emission level should be grandfathered beyond the effective date of the standard.

We also recommend that EPA establish a more stringent ‘Step 2’ standard provided certifiable stoves are available then at an affordable cost. And while we do not recommend a specific emission limit (see test method discussion below), we believe a more stringent standard should be put in place not longer than five years in the future as proposed by EPA. The alternative three-step, eight-year implementation schedule is too long to wait for further emission reductions and does not create the necessary incentives for the introduction of cleaner burning appliances, particularly since EPA does not appear to be relying on significant emission technology innovation. Additionally, as eight years is the statutory schedule for reviewing the NSPS, it will not allow enough time for the more stringent standards to take effect for EPA to evaluate their effectiveness.

Pellet Stoves

Some manufacturers of these appliances have enjoyed a competitive advantage in not complying with the NSPS by creating devices with high air-to-fuel ratios. This exemption for pellet stoves is an unintended consequence of what was intended to be a basis for excluding fireplaces. Pellet stove manufacturers who have not certified their units have been competing in the market with certified pellet stove manufacturers and cord wood heaters, without having to comply with the NSPS requirements including certification testing, labeling, ongoing quality assurance, etc. EPA is right in subjecting all pellet stoves to certification requirements.

These appliances, operating with a manufactured fuel and automated fuel feeding, represent a distinct technology and should be treated as a separate category under the NSPS. Pellet stove manufacturers may only have to make modest changes to their products, possibly only software adjustments, to meet a standard that should be much more stringent than that of hand fed, cord wood heaters.

¹ On the basis that the 5G to 5H correction factor will remain in effect. Alternatively, if EPA decides to discontinue the use of the adjustment factor, the emission standards must be adjusted downward the equivalent amount.

Single Burn Rate Stoves

These devices are currently exempt as a result of a high air-to-fuel ratio and/or high burn rate intended to exclude fireplaces from the original NSPS. EPA estimates that 40,000 of these inexpensive units (relative to certified room heaters) are sold annually. They possess neither catalytic combustors, nor advanced secondary combustion as do certified units. Because the air supply to the combustion chamber cannot be shut down like an airtight room heater, these appliances have not been subject to emissions standards, but they should be. They are fueled using cord wood and used for the same purpose; space heating and for these reasons, their air emissions should be regulated in a similar manner.

Like some pellet stoves as noted above, single burn rates stoves are at a competitive advantage relative to certified units. As a matter of equity to manufacturers who have spent significant time and resources developing cleaner burning appliances, EPA should regulate these devices in the same way as other wood burning room heaters.

EPA has proposed to set emission limits for these devices at the same level as the residential wood heaters, but require testing at only one burn rate. EPA has not presented any data to characterize the emissions of the currently available single burn rate stoves. We recommend that EPA treat single burn-rate stoves as room heaters, and establish emission limits at the same level as room heaters. However, it is essential that EPA subject these units to the same emission testing and certification requirements as those applied to other room heaters.

In particular, the NSPS should require that these units be subject to the minimum burn rate testing. The current NSPS requires that appliances that cannot achieve this minimum burn rate be emission tested with a flue damper in place. It was recognized at the time the original NSPS was developed, and the same concern must be recognized today, that inexpensive flue dampers are readily available and can easily be installed to force these appliances to burn at low burn rates, resulting in much higher emissions. Without this testing requirement, there is no incentive for manufacturers of single burn rate stoves to incorporate readily available emission control technology.

Implementation Schedule

The 1988 Residential Wood Heater NSPS phased in emission limits on manufacturers, with a more stringent emission limit two years after the first limit. Likewise, retail restrictions were phased in over a two-year period to allow manufacturers time to clear out non-compliant units. In its proposal, EPA is calling for a two-step standard setting process, with a more stringent standard to apply at the second step and is asking for comment on an extended three-step process. As noted above, we believe these standards should be put in place as expeditiously as practicable. It is appropriate for EPA to consider the state and use of the technology, the ability for manufacturers to meet the compliance limits, and provide a limited amount of time to clear out the retail supply of noncompliant units.

At present, there is confusion among consumers at the retail level and among air quality agencies as to the status of some appliances. Manufacturers upgrade existing models with cleaning burning ones and it may not be possible to easily tell at the retail level, or once installed, what the certified emissions are. This is an issue with both labeling and product changes without respective changes to the model name that makes it difficult to differentiate products. At a minimum, EPA should make changes to the permanent label as discussed below to correct this source of confusion.

Test Method

We support EPA efforts to improve the repeatability of the certification test methods. For room heaters, we support EPA's proposed approach to incorporate tightened parameters for fuel weight (including coal bed), fuel moisture and limitations on the operation at the start of the test. We believe that the available data support the inclusion of these more restrictive test parameters, but EPA should further assess the capability of test labs to control fuel moisture to the limits in the proposal, and if they are not achievable, promulgate a range that is achievable.

One of the challenges of the original NSPS was to certify appliances tested at low heat outputs so that the appliance operates cleanly during overnight burns and when mild temperatures require lower heat demands. These concerns remain relevant today and we support the proposed retention of low burn rate testing at the current threshold.

Cord Wood Testing/In-use Challenges

Many factors affect how well a NSPS certified appliance operates in the home and how much smoke it emits. Differences in fuel species affect emissions. Differences in how well the wood is seasoned and stored affect the fuel moisture and emissions. Individual flue installation circumstances as well as the outside temperature and wind speed and direction affect how well a natural drafting cord wood heater functions.

Very importantly, how the appliance is operated and maintained affects emissions; as when a non-catalytic stove is operated at a low heat output in which secondary combustion technology designed into the stove is not functioning to burn the smoke; or when a catalyst equipped stove is operated with an ineffective catalyst that needs to be replaced.

To address poorly performing or maintained NSPS certified appliances, we recommend that EPA establish in-use visible emission limits for them. What is needed is a practical method, with reasonable limits on the amount of time visible emissions are allowed to account for conditions like appliance start-up and re-fueling for hand fed cord wood burning devices. Method 22 is the most appropriate in-use compliance technique for this purpose.

Since the behaviors of stove operators are so essential to the emission performance of room heaters, EPA needs to examine potential ways in which emission increases from these practices can be mitigated in the NSPS, including modifications to the certification test

method to more accurately characterize the emissions performance of the appliance, *as used in the home*.

We recognize that homeowner installation and operation is highly variable and that it is not possible for a standardized test method to capture the wide range of circumstances encountered in communities across the country. We are concerned that the laboratory certification test method may not be representative of emission performance in homes and applaud EPA efforts to design a testing protocol that ultimately results in clean burning in-use appliances.

EPA should examine other laboratory testing approaches that more accurately reflect in-use operation and fueling, and strive to develop methods that are reproducible. Reproducible test methods are essential to ensuring confidence in the certification results and a level playing field for the regulated community.

EPA has proposed to substitute the current ‘crib’ fuel method with a new, as yet undefined, method that uses ‘cord wood’ to fuel the appliances, along with other changes to the test protocol. These are proposed to take effect, and become the basis for emission standard compliance in ‘Step 2’, or around 2020. We agree EPA should move towards a cord wood test method and it is critical EPA build upon the small but limited database that exists for cord wood test data. As EPA gathers and evaluates this important cord wood test data, we encourage EPA to establish a more stringent Step 2 emission level based on crib wood test and once sufficient cord wood test data becomes available, apply a conversion factor for an equivalent cord wood emission level.

Hydronic Heaters

Like the process proposed for room heaters, EPA is proposing a two-step process of standard setting with the first step being equivalent to that in the current voluntary program and a more stringent standard to apply in the second step.

Emissions regulations of hydronic heaters are long overdue. In 2007, the trade group representing hydronic heaters asked EPA to regulate them through a revision to the NSPS as EPA is now proposing. These devices are known to produce extremely high emissions of fine particulate, carbon monoxide and toxic pollution, particularly during start-up and heat demand stand-by. In some jurisdictions, they have become the chief public air pollution complaint.

Recognizing the need to improve the emissions performance of these devices, EPA and the northeast states developed a federal voluntary program that ultimately led to state adopted regulations. It is a clear instance in which air quality regulations created an incentive for companies to make technological improvements. This effort has demonstrated, not only that hydronic heaters can be made cleaner, but has produced in an adequate emissions data base on which to set achievable emission limits.

We support the ‘Step 1’ standard EPA has proposed (0.32 lb/MMBtu, the current voluntary standard level), and a more stringent ‘Step 2’ standard. We believe that, like the

emission standards for room heaters, EPA should proceed as expeditiously as possible. This is particularly important in the short term, since cleaner burning technology is already widely available in the market, but only required in a few areas of the country. We are concerned about EPA's proposed hydronic heater test method and recommend EPA seriously consider some modifications to improve it. EPA should require a density range for the test wood used in the method; currently oak (hardwood) is required. In the Northwest, softwoods are more commonly used in wood fired appliances and test results by EPA and the State of Washington exhibit particulate levels (using softwood) more than three times higher than hardwood fuels. Additional method changes should also include an emissions cap (g/hr) to reduce the emissions from oversized units operating below their optimum range and to capture emission spikes from cycling units.

As noted above, we believe EPA should also establish in-use visible emission limits for all NSPS certified appliances, including hydronic heaters. To reduce the cycling frequency and associated emission spikes, we also believe EPA should implement effective regulatory and non-regulatory approaches with the goal of ensuring that hydronic heaters are sized appropriately for the heat load.

Labels

As noted above, the permanent label lacks specificity about the certification status of the appliance. This can be problematic during stove change-out programs, or in places like Oregon, where uncertified unit must be removed upon the sale of the home. Confusion over appliances with overlapping compliance status should be corrected in the future through more specific information on the permanent label. We also support the proposed requirement to make the permanent label more visible, so that for instance, fireplace inserts don't have to be pulled out of their enclosure to verify their certification status.

EPA proposes to do away with the temporary labels, or 'hang tags.' We think there are good reasons to retain the temporary labels, if the information on them represents actual emissions, efficiency and heat output range produced on a comparable basis during emissions certification testing. While this information can be made available without labeling appliances, its availability at the point-of-sale will make it easier for consumers to select the cleanest burning, most efficient heater that is appropriately sized for their heat load.

Finally, these revisions proposed to the NSPS will require significant resources on the part of EPA to implement. EPA must demonstrate its commitment to implement this more complicated regulatory program covering a broader range of appliances and a host of test methods that have not previously been used for regulatory purposes. It can do so for example, by establishing an effective oversight program that has been missing from the random compliance audit program and an electronic means of sharing compliance testing information with interested states.

Thank you for the opportunity to comment on the proposed *Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces, and New Residential Masonry Heaters*. If you have any questions about our comments or require further clarification, please contact me at 206.254.9145.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dan Johnson', with a long horizontal flourish extending to the right.

Dan Johnson, Executive Director
WESTAR Council