



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[EPA-HQ-OAR-2018-0196; FRL-9987-39-OAR]

RIN 2060-AU07

Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces

AGENCY: Environmental Protection Agency (EPA).

ACTION: Advance notice of proposed rulemaking.

SUMMARY: In this action, the Environmental Protection Agency (EPA) is soliciting comment on several aspects of the 2015 Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces (2015 NSPS) in order to inform future rulemaking to improve these standards and related test methods. This action does not propose any changes to the 2015 NSPS, but does take comment on a number of aspects of the rule, including the compliance date for the Step 2 emission limits, Step 2 emission limits for forced-air furnaces, hydronic heaters and wood heaters, Step 2 emission limits based on weighted averages versus individual burn rates, transitioning to cord wood certification test methods, compliance audit testing, third-party review, electronic reporting tool, and warranty requirements.

DATES: *Comments.* Comments must be received on or before **[INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your

comments on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: *Comments.* Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2018-0196, at <http://www.regulations.gov>. Follow the online instructions for submitting

comments. Once submitted, comments cannot be edited or removed from Regulations.gov. See

SUPPLEMENTARY INFORMATION for details about how the EPA treats submitted

comments. Regulations.gov is our preferred method of receiving comments. However, the

following other submission methods are also accepted:

- *Email:* a-and-r-docket@epa.gov. Include Docket ID No. EPA-HQ-OAR-2018-0196 in the subject line of the message.
- *Fax:* (202) 566-9744. Attention Docket ID No. EPA-HQ-OAR-2018-0196.
- *Mail:* To ship or send mail via the United States Postal Service, use the following address: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OAR-2018-0196, Mail Code 28221T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.
- *Hand/Courier Delivery:* Use the following Docket Center address if you are using express mail, commercial delivery, hand delivery, or courier: EPA Docket Center, EPA WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. Delivery verification signatures will be available only during regular business hours.

FOR FURTHER INFORMATION CONTACT: For questions about this action, contact Ms. Amanda Aldridge, Outreach and Information Division, Mail Code: C304-05, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle

Park, North Carolina 27711; telephone number: (919) 541-5268; fax number: (919) 541-0072; and email address: *aldridge.amanda@epa.gov*. For information about the applicability of the new source performance standard (NSPS) to a particular entity, contact Dr. Rafael Sanchez, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, EPA WJC South Building (Mail Code 2227A), 1200 Pennsylvania Avenue, NW, Washington DC 20460; telephone number: (202) 564-7028; and email address: *sanchez.rafael@epa.gov*.

SUPPLEMENTARY INFORMATION:

Docket. The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2018-0196. All documents in the docket are listed in the Regulations.gov index. Although listed in the index, some information is not publicly available, *e.g.*, CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in Regulations.gov or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

Instructions. Direct your comments to Docket ID No. EPA-HQ-OAR-2018-0196. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit information that you

consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. This type of information should be submitted by mail as discussed below.

The EPA may publish any comment received to its public docket. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www2.epa.gov/dockets/commenting-epa-dockets>.

The <http://www.regulations.gov> website allows you to submit your comment anonymously, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any digital storage media you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/dockets>.

Submitting CBI. Do not submit information containing CBI to the EPA through <http://www.regulations.gov> or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on any digital storage media that you mail to the EPA, mark the outside of the digital storage media as CBI and then identify electronically within the digital storage media the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI for inclusion in the public docket. If you submit any digital storage media that does not contain CBI, mark the outside of the digital storage media clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2. Send or deliver information identified as CBI only to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA-HQ-OAR-2018-0196.

Preamble Acronyms and Abbreviations. The Agency uses multiple acronyms and terms in this preamble. While this may not be an exhaustive list, to ease the reading of this preamble and for reference purposes, the following terms and acronyms are defined here:

BSER	Best System of Emission Reduction
CAA	Clean Air Act
CBI	Confidential Business Information
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CSA	Canadian Standards Association
EPA	U.S. Environmental Protection Agency
ERT	Electronic Reporting Tool
FR	Federal Register
g/hr	grams per hour

HPBA	Hearth, Patio and Barbecue Association
ISO	International Organization for Standardization
lb/mmBtu	pound(s) per million british thermal units
NAICS	North American Industry Classification System
NSPS	New Source Performance Standards
OAQPS	Office of Air Quality Planning and Standards (U.S. EPA)
OMB	Office of Management and Budget
PFI	Pellet Fuels Institute
PM	Particulate Matter
PM _{2.5}	Particulate Matter with an aerodynamic diameter of 2.5 micrometers or less (“fine particles”)
R&D	Research and Development
RTC	Response to Comments
U.S.	United States
U.S.C.	United States Code

Organization of this Document. The information presented in this preamble is organized as follows:

I. General Information

- A. Does this action apply to me?
- B. How do I obtain a copy of this document and other related information?

II. Background

- A. Statutory Background
- B. Regulatory Background

III. Request for Comment

- A. Test Methods – Transition to Cord Wood
- B. Feasibility of Step 2 Compliance Date of May 15, 2020
- C. Step 2 Emission Limit for Forced-air Furnaces
- D. Step 2 Emission Limit for Hydronic Heaters
- E. Step 2 Emission Limit Based on Weighted Averages versus Individual Burn Rates for Hydronic Heaters and Forced-air Furnaces
- F. Step 2 Emission Limit for Wood Heaters

G. The EPA Compliance Audit Testing

H. ISO-accredited Third-party Review

I. Electronic Reporting Tool (ERT)

J. Warranty Requirements for Certified Appliances

IV. Statutory and Executive Order Reviews

I. General Information

A. Does this action apply to me?

Table 1 of this preamble lists categories and entities that are the subject of this notice. Table 1 is not intended to be exhaustive, but rather provides a guide for readers regarding the entities likely to be affected by this proposed action. The issues described in this notice, and any changes considered in future rulemakings, would be directly applicable to sources as a federal program. Other federal, state, local and tribal government entities are not directly affected by this action.

Table 1. Source Categories Affected by this Action

Category	NAICS Code¹	Examples of Regulated Entities
Residential Wood Heating	333414	Manufacturers, owners, and operators of wood heaters, pellet heaters/stoves, and hydronic heaters
	333415	Manufacturers, owners, and operators of forced-air furnaces
Testing Laboratories	541380	Testers of wood heaters, pellet heaters/stoves, and hydronic heaters
Retailers	423730	Warm air heating and air-conditioning equipment and supplies merchant wholesalers

¹ North American Industry Classification System.

B. How do I obtain a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this action at <https://www.epa.gov/residential-wood-heaters/final-new-source-performance-standards-residential-wood-heaters>.

Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of this notice at this same website.

II. Background

A. Statutory Background

Section 111 of the CAA requires the EPA Administrator to list categories of stationary sources that, in his or her judgment, cause or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The EPA must then issue “standards of performance” for new sources in such source categories. The EPA has the authority to define the source categories, determine the pollutants for which standards should be developed, and identify within each source category the facilities for which standards of performance would be established.

Section 111(a)(1) of the CAA defines “a standard of performance” as “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction (BSER) which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirement) the Administrator determines has been adequately demonstrated.” This definition makes clear that the standard of performance must be based on measures that constitute BSER, while taking into account multiple statutory factors. The standard that the EPA develops, based on the BSER, is commonly a numerical emission limit, expressed as a

performance level. As provided in CAA 111(b)(5), the EPA does not prescribe a specific technology that must be used to comply with a standard of performance. Rather, sources generally can select any measure or combination of measures that will achieve the emission level of the standard. Where certain statutory criteria are met, the EPA may promulgate design, equipment, work practice or operational standards instead of a numerical standard of performance. See CAA 111(h)(1) and (2).

The Residential Wood Heaters source category is different from most NSPS source categories in that it applies to mass-produced residential consumer products. Thus, an important consideration in determining the emission limit that is achievable through the application of the BSER here is the cost to both manufacturers and consumers as well as any potential environmental impact of delaying production while wood heating devices with those systems are designed, tested, field evaluated and certified.

Section 111(b)(1)(B) of the CAA requires that the standards be effective upon promulgation of the NSPS. Given this statutory requirement, as discussed more fully in the **Federal Register** notice for the 2015 NSPS rulemaking (80 FR 13672), the EPA adopted the stepped (phased) approach for residential wood heaters, hydronic heaters and forced-air furnaces to provide sufficient implementation time for manufacturers and retailers to comply with the Step 2 limits. That is, for the 2015 NSPS rulemaking, the EPA determined that certain emission limits phased in over time reflect the degree of emission limitation achievable through the application of BSER.

B. Regulatory Background

Residential wood heaters were originally listed under CAA section 111(b) in February 18, 1987 (see 52 FR 5065). The NSPS for wood heaters (40 CFR part 60, subpart AAA) was

proposed on February 18, 1987 (see 52 FR 4994) and promulgated on February 26, 1988 (see 53 FR 5859) (1988 Wood Heater NSPS). The NSPS was amended in 1998 to address an issue related to certification testing (see 63 FR 64869).

On February 3, 2014, the EPA proposed revisions to the NSPS (see 79 FR 6330) and published notice of its final rule making revisions on March 16, 2015 (see 80 FR 13672). The final 2015 NSPS updated the 1988 Wood Heater NSPS emission limits, eliminated exemptions over a broad suite of residential wood combustion devices, and updated test methods and the certification process. The 2015 NSPS also added a new subpart (40 CFR part 60, subpart QQQQ) that covers new wood burning residential hydronic heaters and new forced-air furnaces.

For this action, the term “wood heaters” refers to all appliances covered in 40 CFR part 60, subpart AAA, and the terms “hydronic heaters” and “forced-air furnaces” refer to appliances covered in 40 CFR part 60, subpart QQQQ. Also, for this action, the term “wood heating devices” refers to all units, collectively, regulated by the 2015 NSPS (40 CFR part 60, subparts AAA and QQQQ).

In promulgating the 2015 NSPS, the EPA took a “stepped compliance approach” in which certain “Step 1” standards would become effective in May 2015, and more stringent “Step 2” standards would become effective five years later, in May 2020. Considering that over 90 percent of wood heating device manufacturers and retailers are small businesses, the Agency adopted this two-phased implementation approach to try to provide manufacturers adequate lead time to develop, test, field evaluate and certify technologies across their product lines to meet the Step 2 emission limits.

The Step 1 standard reflected demonstrated wood heater technologies at the time. For wood heaters, the Step 1 limit was based on the Washington State standard that had been in

effect since 1995 and had been met by most wood heater manufacturers. For hydronic heaters, the Step 1 emission limit was based on the 2010 Phase 2 Voluntary Hydronic Heater Program. The Step 1 standard for forced-air furnaces was what the EPA concluded would be immediately achievable based on a limited dataset (see 80 FR 13693).

For the Step 1 standards, the EPA provided a “sell-through” period of seven and a half months, until December 2015, to allow retailers additional time after the effective date of the rule to sell the non-compliant wood heaters and hydronic heaters remaining in inventory (see 80 FR 13685). Specifically, the 2015 NSPS allowed non-compliant wood heaters and hydronic heaters manufactured before May 15, 2015, to be imported and/or sold at retail through December 31, 2015 (see 40 CFR 60.532(a) and 60.5474(a)(1))². For the Step 2 standards, the EPA did not provide a sell-through period following the May 2020 compliance date. The EPA concluded at the time that the 5-year period leading up to the May 2020 Step 2 compliance date would provide manufacturers with sufficient lead time to develop, test and certify Step 2-compliant wood heating devices (see 80 FR 13676). However, in light of concerns raised by manufacturers, in a separate rulemaking action, the Agency is proposing a 2-year sell-through period for certain types of wood heating devices that are manufactured before the May 2020 compliance date to be imported and/or sold at retail.

A major component of demonstrating compliance with both the Step 1 and Step 2 standards is a certification test, using an EPA-specified test method, for a given wood heating device. Among other requirements, the emissions from the certification test cannot exceed the

² The EPA did not provide any sell-through period for forced-air furnaces because the EPA determined that the requirements that became effective for these heaters in May 2015 (to revise the owner manuals, and training and marketing materials) could be accomplished without disrupting sales and creating undue burden on manufacturers or retailers (see 80 FR 13682 and 13685).

emission limit for the standard for which it is certifying (either Step 1 or Step 2). It is worth noting that, because these certification test methods were developed outside of the 2015 NSPS, they have their own requirements independent of the 2015 NSPS, such as fuel requirements.

Another important point is that the EPA-specified test methods may not reflect how a typical consumer uses the device. Some test methods require the use of crib wood,³ which is air-dried dimensional lumber, rather than typical cord wood,⁴ or firewood. Additionally, the EPA-specified test methods direct the certification laboratory to target specific burn rate categories for performance assessment purposes.

III. Request for Comment

The EPA has worked with a wide array of stakeholders, including but not limited to industry, states, and non-governmental organizations, in implementing the 2015 NSPS and received feedback from these stakeholders on how to improve the 2015 NSPS. Based on this feedback, the EPA is soliciting comments on the following 10 topics:

A. Test Methods – Transition to Cord Wood

As discussed at 80 FR 13678, 13684 and 13690 in the 2015 NSPS, the EPA contemplated requiring “real world” cord wood test methods for the Step 2 standards in the final rule.

However, the Agency determined that it was premature to require a cord wood based-Step 2 emission limit (except for forced-air furnaces for which CSA B415.1-10 already specified cord wood as the test fuel) because no cord wood test method for wood heaters was available at that time. Rather, the EPA based the Step 2 emission limit on crib wood test data but included a voluntary alternative cord wood compliance option and emission limit to encourage

³ Crib wood fuel is air dried, dimensional cut Douglas fir lumber, arranged in the firebox per the EPA Method 28R.

⁴ Cord wood fuel is traditional firewood cut to nominal commercial sale length and air dried.

manufacturers to certify with cord wood as soon as possible to provide consumers with better information for actual in-home-use performance. Recently, the EPA approved the use of ASTM 3053-17, finalized in November 2017, through the EPA's Broadly Applicable Test Methods approval process. Broadly applicable test methods Alt-125 and Alt-127 (<https://www.epa.gov/emc/broadly-applicable-approved-alternative-test-methods>) are now available for manufacturers wishing to use this voluntary cord wood compliance option.

As the 2015 NSPS did not include a new test method intended to provide "real world" data through cord wood compliance testing, the EPA has received many informal comments and taken part in several discussions concerning the differences between the existing compliance test methods and "real world" cord wood compliance testing. These discussions have led the EPA to review existing wood appliance test methods and conduct research into the data sets provided by those test methods. In doing so, the Agency recognizes a need to better understand what compliance test procedures are necessary in order to provide a cord wood emissions test data set that serves both the compliance test benchmark (pass/fail) and "real world" data collection to support other regulatory needs. Our review of existing test methods has focused on two distinct facets of the testing procedures: (1) particulate collection and measurement during the testing; and (2) operation and fueling of an appliance during the testing. Each of these two pathways is currently represented in our compliance testing paradigms by a separate test methodology. For example, ASTM E2515-11 serves as the particulate collection and measurement test method for all existing NSPS compliance test requirements, but this test method is always used in conjunction with any one of several different operation and fueling protocols, such as the EPA Method 28R for crib wood fuel testing of a wood heater or the EPA Method 28WHH for crib wood fuel testing of a hydronic heater. There is inherent variability in each facet of the testing,

and the overall variability of the testing result combines the variability inherent to each facet. The EPA recognizes that moving away from a crib wood fuel compliance testing paradigm to a cord wood fuel compliance paradigm involves the introduction of the additional variability inherent to cord wood fuel including the use of various species of cord wood fuel across different regions of the U.S. and in different countries where compliance testing may occur. In that light, a review of test method processes and procedures is appropriate with respect to handling this additional and unknown variability, and the Agency is seeking public comment regarding the direction and extent to which the EPA should undertake such evaluations of existing test methods, including the scope of test method, appropriateness of testing procedures, validation of test methodology, and revision and/or developing new compliance test methods not currently associated with the existing NSPS standards. To inform comments, the Agency would point out that the EPA has an existing guideline covering Validation and Peer Review of test methods: (https://www.epa.gov/sites/production/files/2016-02/documents/chemical_method_guide_revised_020316.pdf). While the EPA Methods 5H and 5G (both particulate test methods) underwent a similar review prior to their publication in the 1988 NSPS (see: R. Gay and J. Shah, Technical Support Document For Residential Wood Combustion, EPA-450/4-85-012, U. S. Environmental Protection Agency, Research Triangle Park, NC, February 1986), those are the only wood burning appliance test methods upon which the EPA has collected such data and done such analysis. The EPA Method 5G is closely related to the current ASTM E2515-11, which is required for measuring particulate throughout the 40 CFR part 60, subparts AAA and QQQQ, and so some understanding of this method variability of ASTM E2515-11 exists through our understanding of the EPA Method 5G. Beyond particulate measurement, the EPA's Method 28, Method 28R, Method 28WHH, Method 28WHH-PTS and

all other operation and fueling protocols required by 40 CFR part 60, subparts AAA and QQQQ have not been individually validated or assessed through such a process.

In addition to the lack of information surrounding the validation of these operating and fueling protocols, the Agency recognizes the need to understand the variability introduced to a compliance test protocol through the combustion of various fuel species. Beyond this, the Agency seeks comment on the need to develop a thorough understanding of appliance use and emissions from typical appliance operations such as startup, refueling (adding logs) and other common modes of operation more representative of actual in-home use than the "high burn, mid burn, and low burn" modes currently required by Method 28R and/or similar operating conditions required by the various operating and fueling protocols throughout 40 CFR part 60, subparts AAA and QQQQ. The Agency realizes that "real-world" data collection stems from an understanding of the actual in-home use of the appliance, and any compliance test paradigm relies on consistent application of appliance fueling and operation during performance tests and, while our existing compliance paradigms provide some testing consistency, the Agency would like information supporting their use or specific information as to more appropriate compliance operation and fueling protocol direction for this program.

The EPA seeks comment on whether existing operation and fueling protocols are suited to deliver an appropriate compliance test result and if existing operation and fueling protocols are suited to deliver "real world" emissions data where such data are a necessary output of this program. The EPA also seeks comment on the need to validate existing operation and fueling protocols and/or expend time and resources to develop new validated operation and fueling protocol methods in support of cord wood fuel compliance testing and providing such "real world" emissions data from those tests. Relatedly, the EPA also seeks comment with respect to

developing new emission standards to correspond with new test methods, if new test method development is found to be necessary. Commenters should provide relevant information and data to support their comments.

B. Feasibility of the Step 2 Compliance Date of May 15, 2020

While some manufacturers have begun manufacturing Step 2-compliant units, the EPA has learned of issues with compliance with these emission limits by the May 15, 2020, deadline. In the 2015 NSPS, the EPA concluded that the 5-year period leading up to the May 2020 Step 2 compliance date would provide manufacturers with sufficient lead time to develop, test and certify Step 2-compliant wood heating devices (see 80 FR 13676).⁵

The Step 1 emission standards reflected demonstrated wood heater technologies at that time. Step 2 standards were deemed to be reasonable levels of emission control five years after promulgation. As a part of the 2015 rulemaking, the EPA identified the percentage of wood heaters estimated to be meeting the Step 2 standards prior to promulgation of the 2015 NSPS as 70 percent of pellet stoves and 26 percent of wood stoves. Similarly, 18 percent of hydronic heaters were meeting the Step 2 standards prior to promulgation of the 2015 NSPS, while the limited dataset for forced-air furnaces showed no models meeting the Step 2 standards prior to promulgation of the 2015 NSPS. As of March 20, 2018, there were a total of 78 (44 pellet and 34 crib/cord wood) models that when certified for the Step 1 and Step 2 standards reported emission levels that met the Step 2 standard for wood heaters (as required under 40 CFR 60.532(b) or

⁵ The EPA provided further explanation in the 2015 Response to Comments (RTC) document (Docket ID EPA-HQ-OAR-2009-0734-1775). On page 99 of the RTC, the EPA noted that the 5-year period from 2015 to 2020 “matches the window of time many manufacturers noted they would require to conduct research and development (R&D) and bring a new model to market,” and on page 231 of the RTC, the EPA concluded that the Step 2 standards provide “appropriate lead times for manufacturers to redesign their model lines to accommodate the improved technology across multiple model lines and test, field evaluate, and certify new model lines.”

60.532(c)). In addition, there are nine models that met the Step 2 standard for hydronic heaters (as required under 40 CFR 60.5474(a)(2) or (b)(3)) and one model that met the Step 2 standard for forced-air furnaces (as required under 40 CFR 60.5474(a)(6)) based on the Step 2 certification process. The inventory of certified models as of March 2018 is provided in the document titled: "List of EPA certified Wood Heating Devices March 2018," which is available in the docket and at the website <https://www.epa.gov/compliance/wood-heater-compliance-monitoring-program>. The EPA requests comment and information regarding the percentage of models referenced above that the agency projects are meeting standards for each type of equipment.

Recently, some manufacturers have indicated that they need more time to develop, test, and certify wood heating devices that meet the Step 2 standard and that the costs of Step 2 compliance are beyond what the industry can bear. As a result of this input, the EPA is soliciting comment on whether it is feasible/practicable for manufacturers to meet the Step 2 emission limits by May 15, 2020. Commenters should discuss whether the Step 2 compliance date is achievable or not and should provide relevant information and data to support their position. For example, commenters may wish to address the following questions:

1. Are there other factors that have changed or that the Agency did not consider when issuing the 2015 NSPS that have influenced whether some manufacturers are able to comply, and others are not? Why are some manufacturers able to comply with the Step 2 emission limits by May 2020 and others cannot comply by then?
2. For manufacturers expecting to achieve Step 2 emission limits by May 2020, what is the time and cost to bring the model to market and how does this compare to the EPA's 2015 NSPS estimates? Were there other timing considerations associated with new state level

requirements that were issued in the intervening time between 2015 NSPS promulgation and the May 2020 deadline that may have changed the design timeline? Do manufacturers, considering the size of their businesses, typically sell different models to meet differing state standards or do manufacturers typically have just one model for the nation? Does the manufacturer's business model and distribution chain affect their ability to comply by the compliance deadline? If so, please provide specific information on how this occurs. What is the typical engineering design cycle for small businesses and did five years provide enough time?

3. For manufacturers that do not expect to achieve the Step 2 emission limits by May 2020, what factors are preventing your model(s) from meeting the emission limits? Are there other factors that have changed or that the Agency did not consider when issuing the 2015 NSPS that have had an effect on meeting the May 2020 emission limits? Are there features of wood heating devices that make meeting Step 2 standards more challenging or more expensive? Does a lack of desirable consumer features lead to delays in replacing older dirty stoves or promote switching to other fuels?

The EPA is also soliciting comment on how much the compliance date should be extended, if at all. Commenters should provide relevant information and data to support any request for an extension of the compliance date. For example, commenters may wish to address the following questions:

1. What new factors resulted in the need for time beyond the five years of the 2015 NSPS? The Agency seeks comment and information explaining how cost affects meeting the Step 2 emission limits by May 2020, including why cost projections have changed since the 2015 NSPS, along with relevant data on the cost of research and development,

certification testing, and bringing a model to market. Are there other cost considerations such as material costs, warranty costs, installation costs, or maintenance costs that were unexpected or different from what the Agency estimated in the 2015 NSPS? Have there been any other unforeseen impacts on costs for manufacturers due to changes in consumer preferences or attitudes towards the devices and products that would be needed to comply with Step 2? For example, would any of the new designs needed to meet the May 2020 standards impact the size of the unit, how much it would cost consumers to operate it, or change the maintenance frequency or cost?

2. If more time is needed to meet the Step 2 emission limits, the EPA seeks comment on the time and resources devoted to research and development of a Step 2 model since 2014. Commenters should include information regarding time spent on emissions testing, and the number of runs/tests passed versus the number failed. Both manufacturer-produced test data and certified laboratory test data are of interest to the EPA. The Agency is also interested in receiving information regarding emission reduction efforts and any other information outlining attempts to develop a Step 2-compliant model.
3. If more time is needed to meet the Step 2 emission limits, then how much additional time is needed? For example, the Agency solicits comments and detailed information regarding the timetable for conducting research and development, additional testing, developing saleable products, marketing, and any other relevant information and data that supports a request for a delayed compliance date.

The EPA also solicits comment on the environmental consequences and public health effects, if any, of delaying compliance.

C. Step 2 Emission Limit for Forced-air Furnaces

At the time of the 2015 NSPS, the EPA expected most forced-air furnace manufacturers to transfer technology and knowledge from wood heaters and hydronic heaters to design Step 2-compliant forced-air furnaces by the 2020 compliance date; however, the EPA is only aware of one manufacturer that has received EPA certification as being Step 2 compliant, see website: <https://www.epa.gov/compliance/wood-heater-compliance-monitoring-program>. Prior to the 2015 NSPS, some small forced-air furnace manufacturers had already transferred technology from wood heaters to forced-air furnaces to achieve good performance as discussed at 80 FR 13687. Several manufacturers, however, question whether it is feasible to transfer technology from hydronic heaters. These manufacturers point to the fact that space limitations may affect their ability to adequately insulate models that may be installed in close proximity to combustibles. The Agency requests comment on the installation of cord wood-fired indoor hydronic heaters without large volumes of thermal insulation around the firebox, and whether this approach is feasible and cost effective for forced-air furnaces. The EPA also seeks comment on whether technology transfer is necessary for forced-air furnaces to meet the Step 2 emission limit, and on the technological feasibility and costs of alternatives to thermal insulation around the firebox. The EPA solicits comment on the feasibility of the Step 2 limit for forced-air furnaces and what factors the Agency should consider concerning the feasibility and costs of transferring technologies from other wood heater devices to forced-air furnaces. Comments should include information and data supporting their perspective.

Also, since promulgating the 2015 NSPS, the EPA has received feedback from some manufacturers that complying with the Step 2 emission limit is cost prohibitive. Therefore, the EPA is soliciting comment on whether, regardless of technical feasibility concerns, it is economically feasible to comply with the Step 2 emission limit for forced-air furnaces.

Commenters should explain the issues regarding costs and the feasibility/practicability for achieving the Step 2 emission limit and whether changing the Step 2 emission limit would alleviate these issues, along with data supporting the position. The EPA is also soliciting comment on the environmental and public health effects, if any, of modifying the Step 2 emission limit for forced-air furnaces.

As noted earlier, the EPA is also soliciting comment on the feasibility of the Step 2 compliance date of May 15, 2020. The EPA is soliciting comment on whether to extend the Step 2 compliance date for forced-air furnaces. Commenters should provide relevant information and data to support any request for a delayed compliance date. The EPA is also soliciting comment on the environmental and public health effects, if any, of potential extensions of the Step 2 compliance date for forced-air furnaces.

D. Step 2 Emission Limit for Hydronic Heaters

For the 2015 NSPS, the EPA set the Step 2 emission limits based on its determination of the BSER, which takes into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements (See 80 FR 13687). Since promulgation, however, the EPA has received comments from industry representatives that the cost of compliance with Step 2 emission limits for hydronic heaters is exceeding the EPA's original estimation. The EPA estimated a yearly cost of \$46 million (2013\$), that would be incurred from 2015 to 2020, for implementation of the 2015 NSPS. Details of how costs of the 2015 NSPS were estimated can be found in Chapter 5 of the Regulatory Impact Analysis for that standard.⁶ Furthermore, these comments have indicated that the excess costs have made

⁶ U.S. Environmental Protection Agency. Regulatory Impact Analysis (RIA) for the Residential Wood Heaters NSPS Revision. Final Report. EPA-452/R-15-001. Available on the Internet at https://www3.epa.gov/ttn/ecas/docs/ria/wood-heaters_ria_final-nsps-revision_2015-02.pdf.

complying with the Step 2 emission limit cost prohibitive. Are there other cost considerations such as material costs, warranty costs, installation costs, maintenance costs, or other costs that were unexpected or different from what the Agency estimated in the 2015 NSPS? Have there been any other unforeseen impacts on costs for manufacturers due to changes in consumer preferences or attitudes towards the devices and products that would be needed to comply with Step 2? Therefore, the EPA is soliciting comment on the feasibility of complying with the Step 2 emission limit for hydronic heaters. Commenters should explain the issues regarding the practicability of achieving the Step 2 emission limits, whether the EPA's estimated costs are being exceeded⁷ or if there are other aspects of the costs that the Agency had not previously considered, and whether changing the Step 2 emission limit will alleviate these issues. Commenters should provide relevant information and data to support their positions. The EPA is also soliciting comment regarding the potential environmental and public health effects, if any, of modifying the Step 2 emission limits for hydronic heaters.

As of March 20, 2018, there are nine models that meet the Step 2 standard for hydronic heaters (as required under 40 CFR 60.5474(a)(2) and 60.5474(b)(2) or (b)(3)), and one model that meets the Step 2 standard for forced-air furnaces (as required under 40 CFR 60.5474(a)(6) and 60.5474(b)(6)) based on the Step 2 certification process. These models are listed in the document titled "List of EPA certified Wood Heating Devices March 2018," which is in the docket at EPA-HQ-OAR-2018-0196. Also see link <https://www.epa.gov/compliance/wood-heater-compliance-monitoring-program>.

⁷ Memo to Gil Wood, USEPA, from EC/R Inc. Estimated Residential Wood Heater Manufacturer Cost Impacts. January 30, 2015. Available in Docket ID No. EPA-HQ-OAR-2009-0734.

The EPA is requesting comment regarding these models and models that have not met the Step 2 standard for hydronic heaters and what they demonstrate about achieving the standard at a reasonable cost. Specifically, for manufacturers expecting to be unable to design a hydronic heater to meet the Step 2 standard, the EPA is interested in whether the Step 2 standard applicable to your device is achievable at a reasonable cost by the May 2020 Step 2 compliance date. The Agency is also interested in receiving information regarding efforts undertaken to design hydronic heaters to meet the applicable Step 2 standard, including cost, and if one or more models are expected to be ready for certification by the May 2020 Step 2 compliance date, when you expect to submit your application(s) for certification to the EPA.

As noted earlier, the EPA is also soliciting comment on the feasibility of the Step 2 compliance date of May 15, 2020. The EPA is soliciting comment on whether to extend the Step 2 compliance date for hydronic heaters. Commenters should provide relevant information and data to support any request for a delayed compliance date. The EPA is also soliciting comment on the environmental and public health effects, if any, of potential extensions of the Step 2 compliance date for hydronic heaters.

E. Step 2 Emission Limit Based on Weighted Averages Versus Individual Burn Rates for Hydronic Heaters and Forced-air Furnaces.

For hydronic heaters, the 2015 NSPS retained the proposed Step 1 emission cap of 18 grams per hour (g/hr) for all burn rates. For forced-air furnaces, the 2015 NSPS does not require an emission cap for any burn rates for Step 1. The Step 2 requirements for hydronic heaters did not retain the g/hr cap. Instead, to balance industry's concern with the g/hr cap with concerns about very large emissions at individual burn rates, the Step 2 emission standards for hydronic

heaters and forced-air furnaces require the devices to meet the emission limits for crib wood and cord wood, at each individual burn rate (see 80 CFR 13684 and 13690).

The emission limits for hydronic heaters reflect the data available for the 2015 NSPS rulemaking, when 18 percent of hydronic heaters in the EPA's Voluntary Hydronic Heater Program already met the Step 2 standard. For forced-air furnaces, the EPA determined that research and development would be needed in order to meet the Step 2 limits.⁸

In the 2014 NSPS proposal, the EPA proposed a weighted average approach for compliance. But, because of the large emissions that could potentially result from individual burn rates, along with the proposed weighted average approach, the EPA also proposed a g/hr cap for the certification test. Comments received from industry representatives in 2014 suggested that the g/hr emission cap would be too difficult to meet. To accommodate these concerns, and after considering other public comments, the EPA finalized the emission standards without a g/hr cap but required the devices to meet the emission limit at each individual burn rate to prevent large emission discharges.

Based on concerns raised since promulgating the 2015 NSPS, the EPA is soliciting comment on determining compliance with weighted averages instead of individual burn rates. Commenters should describe the relevant issues pertaining to compliance with the Step 2 emission limit with individual burn rates versus a weighted average and also include data to support their position. Commenters should also discuss and support with data how a weighted average would impact emissions and compliance costs.

F. Step 2 Emission Limit for Wood Heaters

⁸ Memo to Gil Wood, USEPA, from EC/R Inc. Estimated Residential Wood Heater Manufacturer Cost Impacts. January 30, 2015. Available in Docket ID No. EPA-HQ-OAR-2009-0734.

As of March 20, 2018, there were a total of 78 models that when certified for the Step 1 and Step 2 standards reported emission levels that meet the Step 2 standard for wood heaters (as required under 40 CFR 60.532(b) or 60.532(c)). These models are listed in the document titled “List of EPA certified Wood Heating Devices March 2018,” which is in the docket at EPA-HQ-OAR-2018-0196. Also see link <https://www.epa.gov/compliance/wood-heater-compliance-monitoring-program>.

The EPA is requesting comment on all aspects of the costs associated with the Step 2 standards for wood heaters compared to the costs estimated by the EPA in the 2015 NSPS and whether Step 2 is achievable at a reasonable cost. The EPA requests comment on the potential cost difference for consumers to operate different types of wood heaters and, in particular, the cost of operating a pellet wood heater compared to the cost of operating a cord/crib wood heater.

If you are a manufacturer that has been unable to design a wood heater to meet the Step 2 standard, the EPA is interested in whether you think the Step 2 standard applicable to your device is achievable at a mean capital cost per model of \$162,300 (for wood stoves and pellet stoves, in 2016 dollars) by the May 2020 Step 2 compliance date and whether this cost is reasonable.⁹ The EPA is requesting comment on the technical feasibility of achieving the Step 2 standards for 40 CFR part 60, subpart AAA wood heaters including both pellet and cord/crib wood heaters and whether the Agency should consider creating separate source categories for these different wood heaters types.¹⁰ Since more pellet stoves meet Step 2 than crib/cord wood

⁹ Estimate is based on the mean capital cost per model in Table 5-1, p. 5-5 of that RIA, escalated to 2016 dollars from the original 2013 dollar estimate of \$156,000. Escalation uses the annual value of GDP implicit price deflator, which is 1.04127 higher in 2016 than 2013.

¹⁰ In the 2015 final rule, the EPA noted that it was “making a single determination of BSER for catalytic, noncatalytic, hybrid, cord wood and pellet heaters and furnaces in order to not restrict open market competition.” Furthermore, as noted in the Response to Comment document: “It is

stoves, the EPA is interested in hearing from manufacturers and the public on the concept of different emission standards for pellet-fired and crib/cord wood-fired heating devices. The Agency is also interested in receiving information regarding the efforts you have undertaken to design a wood heater, both for pellet and crib/cord wood heaters, to meet the applicable Step 2 standard, including the cost of your efforts to do so. In addition, the EPA requests information on how many models of pellet and crib/cord wood heaters you expect will be and will not be ready for certification by the May 2020 Step 2 compliance date, and when you expect to submit your application(s) for certification to the EPA.

Additionally, the EPA has received informal comments from several parties regarding emissions testing variability and, along with those discussions, issues have been raised regarding the units or format of the Step 2 emission limit in 40 CFR 60, subpart AAA. One issue raised is that the existing emission limit in units of grams per hour (g/hr) increases variability in that the duration of the performance test directly impacts the g/hr result, thus incentivizing longer test periods. The EPA is soliciting comments on this form of the standard (g/hr) and whether it is appropriate for the purpose of defining the compliance limit and, if not, what form of a standard

up to manufacturers to decide what combustion technology/wood fuel to use to meet the emission limits and up to consumers to decide what types of heaters they wish to purchase that are certified to meet those limits.” Performance standards may drive competition in the marketplace; however, maintaining just one source category for these wood heaters may distort the marketplace and raise costs for both manufacturers and consumers if only a limited number of wood heaters or predominantly one type of wood heater can meet the Step 2 standards. Pellet wood heaters may be more readily able to meet more stringent standards due to the consistent fuel type and continual operating mode compared to crib/cord wood heaters that may require more costly redesigns to meet the Step 2 standards. In addition, the agency did not consider the lifetime operating costs in the 2015 NSPS as the difference in fuel costs between operating a crib/cord wood and pellet wood heater could be considerable over the lifetime of the wood heater if consumer choice is limited to just pellet stoves due to the Step 2 standards.

would be more appropriate and reasons supporting those positions. Other possible unit options for the emission limit could be g/kg or lb/mmBtu. Commenters are asked to provide relevant information and data (where available) to support their comments.

G. The EPA Compliance Audit Testing

The EPA seeks comment with respect to the EPA compliance audit test provisions in the current rules (2015 NSPS), found at 40 CFR 60.533(n) (80 FR 13708) for wood heaters and at 40 CFR 60.5475(n) (80 FR 13721) for hydronic heaters and forced-air furnaces. Specifically, the Agency is seeking comment on whether revisions to the current compliance audit test provisions are necessary to ensure compliance. First, the Agency is seeking comment on 40 CFR 60.533(n)(2)(i) and 40 CFR 60.5475(n)(2)(i) regarding if it is appropriate for the EPA to select a lab to perform the audit test from any approved test laboratory, and whether the EPA should also consider using a federal laboratory. Alternatively, the EPA seeks comment on whether audit tests should be performed by the same lab that did the certification test for a given wood heater appliance. If the audit test should be done by the certifying lab, the EPA seeks comment on how to handle situations where the original certifying lab is out of business or unable to accommodate the audit test. Commenters should include any relevant information and data that support their views and comments.

Second, as some variability is inherent in emissions testing, the Agency is seeking comment (and information) on whether and, if so, to what degree, the EPA should consider this variability when assessing the result of an audit test to determine if a wood burning appliance successfully passed the test, or not. Please provide relevant information and data to support your comments.

Third, the Agency is seeking comment on establishing (as well as how best to manage the regulatory cost of), through NSPS regulation, a program using ASTM E691-99 “Standard Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method.” The intent of such a program would be to develop and establish wood heating device audit test acceptability criteria, and to provide data useful to the EPA in both refining wood heating device test methodology development and in aiding the regulatory data collection with respect to wood heater, forced-air furnace, and hydronic heater emissions and standards setting processes. The EPA is also requesting comment on the cost or any concerns with specifying a specific certification lab and any discussion of the use of a federal versus a private lab. For the 2015 NSPS, the EPA estimated a cost of \$63,564 for each compliance audit conducted for each hydronic heater and forced-air furnace over the period of 2015 to 2017, an estimate documented in the Supporting Statement for the standard.¹¹

H. ISO-accredited Third-party Review

In the 2015 NSPS, the EPA included a new feature to improve the process by which manufacturers of wood heating devices apply for certification (see 80 FR 13684, and the ISO-accredited third-party review at 80 FR 13706 and 80 FR 13719). The ISO-accredited third-party review was included in the 2015 NSPS to streamline and speed up the review process.

The EPA is seeking comment on whether third-party review has streamlined the process for manufacturers to submit their certification applications and/or what issues and problems stakeholders have experienced with third-party review process. The EPA also solicits suggestions for improving the third-party review and reducing regulatory burden, including what

¹¹ U.S. Environmental Protection Agency. NSPS for New Residential Hydronic Heaters and Forced-Air Furnaces (40 CFR Part 60, Subpart QQQQ) (Final Rule). January 2015. Pp. 11-12.

specific rule changes would be appropriate, and why. Commenters should provide relevant information and data to support their comments and suggestions.

The current process allows the EPA-approved certifying lab to also act as the third-party reviewer for a given appliance. Some external stakeholders have raised concerns about allowing a lab to act as both the certifying test lab and third-party reviewer for a given certification test. The EPA solicits comments as to whether an EPA-approved lab should be allowed to act as both the certifying lab and third-party reviewer. Commenters should address whether this is a problem and provide available data to support their position.

I. Electronic Reporting Tool (ERT)

The EPA seeks comment on establishing electronic reporting for submitting the non-confidential business information (CBI) certification application, including the compliance test data, rather than via hard copy, to relieve manufacturer burden and enhance efficiencies. One possibility is the EPA's Electronic Reporting Tool (ERT). The ERT is a Microsoft Access® application that generates electronic versions of source test reports. Information on the ERT can be found at <https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>. The EPA believes that using the ERT will relieve the burden on manufacturers in the certification application process by standardizing the reporting format by having specific data elements reported, thereby helping to ensure completeness and accuracy of the data submitted. As a result, the electronically submitted application with complete and accurate data will enable an efficient and timely review. In addition, because the ERT performs the required method calculations, certification test report errors will be reduced and the burden of performing these calculations manually will be eliminated for the manufacturers as well as for the third-party certifiers and the EPA reviewers. If the ERT were used, it would generate a non-CBI test report

(in pdf format) along with the ERT-generated Access database (accdb) file that could be submitted to the EPA for certification and once certified, posted to the manufacturer's website. This ERT-generated test report would include a list of attachments in the ERT file but not the attachments themselves. The attachments would be contained in the ERT accdb file and if posted to the manufacturer's website would be available to the public. Posting the pdf will also address the version control concerns of the ERT-generated database file. These two components could satisfy the reporting requirements in 80 FR 13713 and 13725. The EPA seeks comment on whether to include the option of using the ERT to create a non-CBI and a CBI test report and certification package (pdf and .accdb file) that satisfies the reporting requirements in 40 CFR 60.537(f) and 60.5479(f), which requires the manufacturer to submit the results of a certification test within 60 days of completing each performance test. If the EPA changes the current provisions, the Agency expects that the manufacturers would still be required to post the full non-CBI test report (pdf with all attachments or ERT generated pdf with the Access database (accdb) file) on the manufacturer's website and submit the CBI test report separately to the EPA. Manufacturers, who claim that some of the information being submitted is CBI (e.g., design drawings), could also utilize the same non-CBI test report generated by the ERT and add the design drawings as an attachment to be submitted to the EPA as CBI in order to satisfy the requirements under 40 CFR 60.537(f) and 60.5479(f). Similarly, the non-CBI report with no CBI information attached could be posted to the manufacturer's website within 30 days of receiving a certification of compliance to satisfy 40 CFR 60.537(g) and 60.5479(g). Please provide as much detailed information as possible to support your comments regarding this approach.

J. Warranty Requirements for Certified Appliances

The 2015 NSPS requires owners or operators to operate wood heating devices consistent with the owner's manual (see 40 CFR 60.532(f)(13) and (g) and 60.5474(f)(13) and (g)). The 2015 NSPS also requires manufacturers to provide an owner's manual that clearly states that operation in a manner inconsistent with the manual, such as burning prohibited material or pellets that do not meet the minimum requirements of the 2015 Rule, would void the warranty (see 80 FR 13751, appendix I to Part 60). The cost of this requirement to provide an owner's manual is an average of \$3,750 per hydronic heater or forced-air furnace model over the time period of 2015 to 2017, according to the Supporting Statement for the 2015 NSPS.¹² Although numerous states expressed their support for these requirements as a mechanism to help enforce the 2015 NSPS, some stakeholders have questioned whether the EPA has the statutory authority to impose these requirements. Stakeholders have also raised other issues regarding the warranty requirements. The EPA is, therefore, soliciting comments regarding retention, revision, or elimination of the warranty requirements. For example, the EPA would be interested in hearing whether such requirements are necessary for the safe and efficient operation of the wood heater devices. Commenters supporting retention of the requirements should address whether any changes are recommended to the warranty requirements along with data, as appropriate, and an explanation to support their position. Commenters supporting elimination of the requirements should provide an explanation to support their position.

VII. Statutory and Executive Order Reviews:

Under Executive Order 12866, entitled *Regulatory Planning and Review* (58 FR 51735, October 4, 1993), this is a "significant regulatory action." Accordingly, the EPA submitted this

¹² U.S. Environmental Protection Agency. NSPS for New Residential Hydronic Heaters and Forced-Air Furnaces (40 CFR Part 60, Subpart QQQQ). January 2015. pp. 11.

action to the Office of Management and Budget (OMB) for review under Executive Order 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action. Because this action does not propose or impose any requirements, and instead seeks comments and suggestions for the Agency to consider in possibly developing a subsequent proposed rule, the various statutes and Executive Orders that normally apply to rulemaking do not apply in this case. Should the EPA subsequently determine to pursue a rulemaking, the EPA will address the statutes and Executive Orders as applicable to that rulemaking.

List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure.

Dated: November 21, 2018.

Andrew R. Wheeler,
Acting Administrator.

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