



Small Entity Compliance Guide

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

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Small Entity Compliance Guide
for
'Standards of Performance for New Residential Wood Heaters,
New Residential Hydronic Heaters and Forced-Air Furnaces'

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Notice

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The statements in this document are intended solely to aid regulated entities in complying with the published national regulation "Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces". The final rule was published on March 16, 2015 in **80 FR 13702** for subpart AAA – Standards of Performance for New Residential Wood Heaters and in **80 FR 13715** for subpart QQQQ – Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces.

EPA may decide to revise this guide without public notice to reflect changes in EPA’s approach to implementing the rule’s requirements or to clarify and update text. To determine whether EPA has revised this guide and/or to obtain copies, contact EPA’s Amanda Aldridge at (919) 541-5268, aldridge.amanda@epa.gov or David Cole at (919) 541-5565, cole.david@epa.gov.

The full text of the rule is available online at: <http://www2.epa.gov/residential-wood-heaters/final-new-source-performance-standards-residential-wood-heaters>

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1.0 Introduction to the Rule and this Compliance Guide

This document was published by the Environmental Protection Agency (EPA) as our official compliance guide for small entities subject to the Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces, as required by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA). Before you begin using the guide you should know that the information in this guide was compiled and published in May of 2015. The EPA is continually improving and updating its rules, policies, compliance programs, and outreach efforts. You can determine whether EPA has revised or supplemented the information in this guide by checking the Residential Wood heaters program web page for the rule, compliance requirements and technical and related information (<http://www2.epa.gov/residential-wood-heaters>).

The final residential wood heater New Source Performance Standards (NSPS) – called simply “the rule” in this document – was signed by the EPA Administrator on February 3, 2015 and published in the Federal Register on March 16, 2015. The rule’s effective date is May 15, 2015 to allow 60 days for Congressional review after publication in the Federal Register. On this effective date, the rule’s requirements become law. The information in this guide was compiled in order to assist those entities subject to the rule to understand better its requirements.

A complete copy of the final rule can be found in the Federal Register (Volume 80, Number 50, p. 13671) at <https://federalregister.gov/a/2015-03733>. The codification of the final rule’s two subparts can be found in the electronic Code of Federal Regulations (eCFR): Subpart AAA – Standards of Performance for New Residential Wood Heaters is at <http://go.usa.gov/3kQ6A>; and Subpart QQQQ – Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces is at <http://go.usa.gov/3kQFB>. The docket for this rule, which includes supporting technical documents as well as public comments, is available on **Regulations.gov**, docket ID number EPA-HQ-OAR-2009-0734.¹

The Clean Air Act (CAA) requires the EPA to set NSPS for industrial categories that cause, or significantly contribute to, air pollution that may endanger public health or welfare. Residential wood smoke emissions are a significant national air pollution problem and human health issue. These emissions occur in many neighborhoods across the country and impact people in their homes. Wood smoke is made up of a mixture of gases and fine particles that are produced when wood and other organic matter burns. The fine particles in smoke – also called fine particulate matter (PM) pollution or PM_{2.5} (because these particles have a diameter \leq 2.5 micrometers) – can get deep into the lungs, harming the lungs, blood vessels and heart. People with heart, vascular or lung disease, older adults and children are the most at risk. On an economic basis, the public benefits of this rule vastly outweigh the costs, with every dollar in additional cost producing more than \$100 in public benefit.

This rule updates the previous 1988 residential wood heater NSPS (which regulated wood stoves under subpart AAA), regulates additional wood heaters including hydronic heaters and forced-air furnaces

¹ The **Regulations.gov** website, part of an eRulemaking Program created in 2002, is managed by the U.S. Environmental Protection Agency with assistance of partner federal agencies. Regulations.gov is a public source of information on the development of federal regulations and other related documents issued by the U.S. government. Through this site, you can find, read, and comment on regulatory issues that are important to you.

(under subpart QQQQ) and reflects today's technology, referred to as best systems of emission reduction (BSER), considering costs. In general, depending on the type of residential wood heater, the rule requires that PM emission limits and/or work practice standards be met when the rule becomes effective on May 15, 2015 and that tighter, more stringent PM limits be met 5 years later on May 15, 2020. This stepped approach allows manufacturers time to adapt emission control technologies to their particular model lines.

The rule achieves several objectives for new residential wood heaters, including applying updated emission limits that reflect the current BSER; eliminating exemptions over a broad suite of residential wood combustion devices; strengthening test methods as appropriate; and streamlining the certification process. This final action does not include any requirements for heaters solely fired by gas, oil or coal. **In addition, this rule does not include any new requirements associated with appliances that are already in use in people's homes.** The EPA continues to encourage state, local, tribal, industry and consumer efforts to change out (replace) older heaters with newer, cleaner, more efficient heaters. In addition, we encourage state, local, and tribal authorities to develop site-specific installation and operating requirements to help ensure healthy air for all. Additional information is on the EPA Burn Wise web site at www.epa.gov/burnwise.

Considering that over 90 percent of the manufacturers and retailers impacted by the rule are small businesses, this compliance guide is generally applicable to all entities subject to the rule. The guide is organized as follows:

1. Introduction and general information
2. Description of entities that are subject to the rule
3. Provisions to ease the regulatory burden and transition to the rule's requirements
4. Overview of the rule's requirements for manufacturers
5. Overview of the rule's requirements for testing laboratories
6. Overview of the rule's requirements for third-party certifiers
7. Overview of the rule's requirements for retailers, wholesalers, importers and distributors
8. Overview of the rule's provisions for owners and operators
9. Overview of who implements and enforces the rule and how to report violations
10. More information for further assistance

A note regarding rule citations provided throughout this guide:

Note that citations to Code of Federal Regulations (CFR) rule sections are provided throughout this guide in order to assist the reader in locating the official rule's wording. For brevity, the nomenclature omits both *40 CFR* and *(2015)* in each citation, as these are common to every citation in this guide. For example, when referring to the official rule section 40 CFR § 60.532 (2015), we simply use §60.532.

Table 1-1. Explanation of Acronyms and Abbreviations

Acronym	Long Name
1988 NSPS	The New Source Performance Standards (rule) promulgated in 1988 regulating residential wood stoves that this rule will supersede
ASTM	American Society for Testing and Materials (now ASTM International)
BSER	Best System of Emission Reduction
BTU	British Thermal Unit
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
FR	Federal Register
g/hr	Grams per hour
ISO/IEC	International Organization for Standardization / International Electrotechnical Commission
lb/MMBtu	Pounds per million British thermal unit
NSPS	New Source Performance Standards
NYDEC	New York State Department of Environmental Conservation
OAQPS	Office of Air Quality Planning & Standards (USEPA)
OECA	Office of Enforcement & Compliance Assurance (USEPA)
PFI	Pellet Fuels Institute
PM	Particulate Matter
PM _{2.5}	Particulate Matter with diameter ≤ 2.5 micrometers ("fine particles")
QA	Quality Assurance
R&D	Research and development
RHNY	Renewable Heat New York
SBA	U.S. Small Business Administration
SBAR	Small Business Advocacy Review
SBREFA	Small Business Regulatory Enforcement Fairness Act
Subpart AAA	The subpart of this rule which regulates new wood stoves (including adjustable burn rate stoves, single burn rate stoves and pellet stoves)
Subpart QQQQ	The subpart of this rule which regulates new hydronic heaters and new forced-air furnaces

2.0 What Entities are Subject to the Rule?

To understand *who* is subject to the rule's requirements, it is important to understand what appliances are considered affected wood heaters, subject to the rule's requirements, and what appliances are not. This rule applies to newly manufactured residential wood heaters – that is, residential heaters that burn wood and are manufactured after the effective date of the rule, May 15, 2015. (Note: We use the word “heater” and “stove” interchangeably in this guide.)

Subpart AAA of the rule applies to **manufacturers, owners and operators of newly manufactured residential wood-burning stoves/heaters**, as well as to **test laboratories** and **third-party certifiers** who wish to test and certify these heaters. This type of appliance, also referred to as a room/space heater (to differentiate it from a central heater), does not distinguish between heaters that are free standing, built-in or fireplace inserts. Examples of wood stoves subject to this rule currently include, but are not limited to, the following appliances:

- noncatalytic adjustable burn rate stoves;
- catalytic adjustable burn rate stoves;
- hybrid adjustable burn rate stoves;
- single burn rate stoves; and
- pellet stoves.

Subpart QQQQ of the rule applies to **manufacturers, owners and operators of newly manufactured residential wood-burning central heaters**, as well as to **test laboratories** and **third-party certifiers** who wish to test and certify these heaters. Central heaters, unlike room/space heaters regulated under subpart AAA, warm spaces other than the space where the device is located, by the distribution of heated air or heated water through ducts and pipes. Central heaters subject to this rule currently include, but are not limited to, the following appliances:

- indoor hydronic heaters (a.k.a. “wood boilers”);
- outdoor hydronic heaters (a.k.a. “outdoor wood boilers”); and
- forced-air furnaces (a.k.a. “warm air furnaces”).

Retailers, wholesalers, importers and distributors are also subject to restrictions under this rule regarding the sale of non-certified residential wood heaters. Specifically, only residential wood heaters certified to meet the 2015 emission limits may be imported, sold or distributed in the U.S. after December 31, 2015 (for catalytic stoves, non-catalytic stoves, hybrid stoves, single-burn rate stoves, pellet stoves and hydronic heaters). On or before December 31, 2015, to minimize stranded inventory costs, non-compliant heaters of these types – *if manufactured before May 15, 2015* – may be sold, imported and distributed in the U.S. However, only forced-air furnaces meeting the 2015 work practice standards (pertaining primarily to owner manual requirements) may be imported, sold or distributed after May 15, 2015. Furthermore, only small forced-air furnaces meeting the 2016 emission limits and large forced-air furnaces meeting the 2017 emission limits may be imported, sold or distributed after May 16, 2016 and May 15, 2017, respectively. Finally, only residential wood heaters certified to meet the 2020 emission limits may be imported, sold or distributed in the U.S. after May 15, 2020 (for all types of residential wood heaters).

The rule’s emission limits do not apply to the following appliances (although labeling requirements apply to some on this list, as detailed in Section 4.3 of this guide):

- wood heaters or other wood-burning appliances already in use in people’s homes;
- appliances that are not primarily heating devices (for example, manufactured or site-built masonry fireplaces);
- appliances used solely in non-residential commercial settings (although if the appliance is also used for residential purposes, it is subject to this rule);
- masonry heaters;
- wood heaters manufactured only for export outside the US;
- wood heaters used only for research and development purposes;
- heaters that do not burn wood or wood pellets (*e.g.*, coal-only heaters or corn-only pellet stoves);
- cook stoves (as defined in the rule);
- camp stoves (as defined in the rule); and
- traditional Native American bake ovens (as defined in the rule).

Table 2-1 summarizes the entities and wood heaters subject to the rule’s emission limits, as well as the heaters and appliances not subject to the rule’s emission limits.

Table 2-1. Entities and Appliances Subject to the Rule

Entities Subject to Rule	Residential Wood-Burning Heaters Subject to Rule’s Emission Limits		Appliances not Subject to Rule’s Emission Limits
	Subpart AAA	Subpart QQQQ	
Manufacturers (of heaters subject to rule) including NAICS codes 333414 and 333415 Test Laboratories (of heaters subject to rule) including NAICS code 541380 as applicable Third-Party Certifiers (of heaters subject to rule) Owners and Operators (of heaters subject to rule) Retailers, Wholesalers, Importers and Distributors (of heaters subject to rule)	Noncatalytic stoves	Indoor hydronic heaters (“wood boilers”)	Wood heaters already in use in homes
	Catalytic stoves	Outdoor hydronic heaters (“outdoor wood boilers”)	Non wood-burning heaters (<i>e.g.</i> , gas-only, oil-only, coal-only, corn-only)
	Hybrid stoves	Forced-air furnaces (“warm air furnaces”)	Masonry heaters
	Pellet stoves	Multi-fuel central heaters if one fuel is wood	Fireplaces, Cook stoves, Camp stoves, Pizza ovens, Fire pits, Barbecues, Chimineas, Traditional Native American bake ovens
	Single burn rate stoves	Other wood-burning heaters functioning as residential central heaters (<i>e.g.</i> , innovative design yet to be manufactured)	Heaters used only for Research and Development
	Multi-fuel stoves if one fuel is wood		Export-only heaters
			Heaters used to heat <i>only</i> commercial spaces

3.0 Provisions to Ease Regulatory Burden and Transition to Rule's Requirements

This section lists and describes the provisions that the EPA included in the final rule to ease the financial and logistical burden on the regulated entities (manufacturers, test laboratories, third-party certifiers, retailers, wholesalers, importers, distributors and owners and operators) and to ease the transition to the rule's regulatory requirements.

3.1 Provisions for Manufacturers

Phased-in compliance dates: Similar to the 1988 wood heater NSPS, the rule is based on a stepped compliance approach that provides manufacturers a two-phased implementation of emission limits. Considering that over 90 percent of the manufacturers and retailers are small businesses, we have included this approach in the revised subpart AAA and new subpart QQQQ. This stepped compliance approach allows extra time for manufacturers to develop, test, field evaluate and certify current technologies across their consumer product lines to meet 2020 emission limits and, in most cases, it allows retailers to sell-through inventory (*i.e.*, additional time after the rule's 2015 effective date to sell non-compliant inventory).

The 2015 limits are primarily designed to give manufacturers the ability to bring products to market (minimizing testing logjams) while designing appliances to meet the more stringent 2020 limits. We have determined that the first step represents the emission levels that many models can readily achieve now using today's designs and technology. As indicated by commenters, there is broad recognition that the 2015 standards are imminently achievable for most of the industry. We anticipate that manufacturers will market existing models that already meet the 2015 limits to focus research and development (R&D) attention on designing heaters capable of meeting the more stringent 2020 limits.

Testing of one representative model to certify entire model line: As with the 1988 NSPS, because of concern regarding potential negative impacts on small businesses and potential certification delays, the revised subpart AAA (for wood heaters/stoves) and the new subpart QQQQ (for hydronic heaters and forced-air furnaces) require manufacturers to participate in a certification program that tests a representative heater per model line, rather than testing every heater. If the representative heater meets the applicable emission limits contained in this rule, the entire model line may be certified. Individual heaters within the model line are still subject to all other requirements, including labeling and operational requirements. Manufacturers are required to have quality assurance (QA) programs to ensure that all heaters within the model line conform to the certified design and meet the applicable emission limits. Third-party certifiers are required to conduct at least annual audit inspections of the manufacturer's QA program. The EPA will also continue to have the authority to conduct audit inspections to ensure compliance.

Cord wood testing optional, not required: To ease the transition to future standards requiring cord wood-based certification, under this rule manufacturers may test using either cribs or cord wood. (Pellet heaters must be certified using pellet fuel.) Manufacturers testing with cord wood for 2015 must meet the same emissions limit as those testing using cribs. However, for the 2020 standards, manufacturers testing with cord wood may meet an alternative emissions limit. The 2020 crib wood limit under subpart AAA is 2.0 g/hr, while the cord wood limit is 2.5 g/hr. The 2020 crib wood limit under subpart QQQQ is 0.10 lb/mmBtu, while the cord wood limit is 0.15 lb/mmBtu.

Automatic compliance until May 15, 2020 for some wood heaters subject to subpart AAA: To ease the transition on small businesses, the EPA will not require new testing of heaters that have current certificates of compliance under the 1988 NSPS that show they meet the May 15, 2015 emission levels. Those certificates are automatically extended beyond their current expiration date until May 15, 2020, the compliance deadline for the 2020 emission limits. No separate certification will be required. Over 85 percent of heaters/stoves being sold today already meet the 2015 emission limit.

These automatic EPA certifications will avoid unnecessary economic impacts on those manufacturers who can then focus their efforts on developing a full range of cleaner models that meet Step 2 emission levels. This measure should also help avoid potential delays at laboratories conducting certification testing for heaters newly subject to the NSPS.

Automatic compliance until May 15, 2020 for some wood heaters subject to subpart QQQQ: To ease the transition on small businesses, the following hydronic heaters will be automatically deemed EPA certified to meet the 2015 emission limits until the 2020 compliance date, May 15, 2020:

- hydronic heaters with valid EPA Phase 2 qualifications under the voluntary EPA Hydronic Heater Partnership Agreement of October 12, 2011 (that have been tested with the revised EPA Method 28 WHH);
- hydronic heaters certified by the New York State Department of Environmental Conservation (NYSDEC) that show compliance with the May 15, 2015 emission limits; and
- residential pellet hydronic heaters that have been qualified under the Renewable Heat New York (RHNY) program.

The above list of hydronic heaters will be automatically deemed certified; no separate EPA certification will be required until May 15, 2020.

Similarly, forced-air furnaces independently certified (*i.e.*, not self-tested) under Canadian Standards Association (CSA) B415.1-10 as well as forced-air furnaces certified by the NYSDEC that show compliance with the 2015 emission limits will be deemed EPA-certified to meet the May 15, 2015 emission limits under this final rule until the 2020 compliance date, May 15, 2020.

These automatic EPA certifications will avoid unnecessary economic impacts on those manufacturers who can then focus their efforts on developing a full range of cleaner models that meet the 2020 emission levels. This measure should also help avoid potential delays at laboratories conducting certification testing for heaters newly subject to the NSPS.

One-year conditional certification while transitioning to third party certification: Regulated entities expressed concern, which the EPA shares, that there may not be sufficient third-party certifier capacity and review and approval capacity by the EPA, especially in the first year. Therefore, to avoid unfairly restricting the production and sales of manufacturers who do all the things they should do and then potentially have to wait on EPA approval, we have added a conditional, temporary approval – based on the manufacturer’s submittal of a complete certification application – for all stoves subject to subpart AAA and for forced-air furnaces subject to subpart QQQQ. The 1-year conditional, temporary approval by the EPA does not apply to hydronic heaters because they have been required to submit third-party certifications for the EPA hydronic heater voluntary partnership program since 2008 and will continue to do so under this NSPS.

We will allow a conditional certification for up to one year. This will assist those manufacturers with models that are not eligible to be deemed automatically certified (as described above). To obtain the conditional certification, manufacturers must submit a complete certification application that includes a full emissions test report from an ISO/EPA-accredited laboratory and all required compliance statements by the manufacturer, with the exception of a certificate of conformity by an ISO/EPA-approved third-party certifier. The conditional approval would allow the manufacture and sale of a compliant model line for 1 year or until EPA review of the application, whichever is earlier. Within that year, the manufacturer (or third-party certifier, on the manufacturer's behalf) must submit the certificate of conformity by the ISO/EPA-approved third-party certifier for that model line.

Twelve-month extension of QA audits of the manufacturer by the third-party certifier: As part of the requirement for a certificate of conformity for each certified model line, the manufacturer must develop a QA plan and conduct a QA program. The QA plan must be submitted to and approved by the third-party certifier. This QA program must include unannounced audits by the third-party certifier. We are allowing 1 year after the rule's effective date until May 16, 2016 for the third-party certifier to review and approve the manufacturer's QA plan and for the manufacturer (or the third-party certifier, on behalf of the manufacturer) to submit the certification of conformity to the EPA. This 1-year extension (for all appliances except hydronic heaters) provides manufacturers time to contract with an ISO-accredited third-party certifier and finalize third-party based QA procedures required under the rule for a certification of conformity.

Sell-through until December 31, 2015: Based on numerous comments from small business manufacturers and small business retailers and some states, we lengthened our proposed sell-through period for subpart AAA (from 6 months) to December 31, 2015 (nearly 8 months after the rule's effective date). Wood stoves *manufactured prior to May 15, 2015* may be sold at retail, wholesale, imported and distributed through December 31, 2015. To minimize stranded inventory, this sell-through provision applies even if these wood stoves do not meet the Step 1 standard. No manufacturer, distributor, wholesaler, importer or retailer may sell or offer to sell new stoves after December 31, 2015, that do not meet the 2015 emission limits. Eight months will better cover the primary selling period. We are also providing the same sell-through period until December 31, 2015 for hydronic heaters covered by subpart QQQQ to cover the primary selling period. We are not allowing a sell-through period for forced-air furnaces because the manufacturers and retailers can quickly revise and replace the owner's manuals to add best burn practices to comply with the work practice and operational standards.

Section 4.0 of this guide discusses what the rule requires of residential wood heater manufacturers.

3.2 Provisions for Test Laboratories

Three-year extension for ISO accreditation for EPA-accredited labs and 6-month extension for non EPA-accredited labs: The introduction of the ISO-based process will result in higher quality, more consistent test reports, which will help streamline and focus the EPA's review and approval responsibilities. However, we have balanced concerns stated by some laboratories, regarding the potential burden of obtaining ISO/IEC 17025 accreditation, by delaying implementation of this requirement. This will provide additional time for laboratories that are not currently EPA-accredited to gather any needed resources to obtain the required accreditation. Laboratories already accredited have 3 years after the rule's effective date, until May 15, 2018, to achieve ISO accreditation and submit documentation to EPA that they have accreditation under ISO-IEC Standard 17025 to perform testing using the test methods specified in the rule. Furthermore, for laboratories that are not EPA-accredited, we are allowing a 6-month extension for achieving ISO-IEC accreditation when testing appliances

subject to the rule other than hydronic heaters. That is, laboratories that are not already EPA-accredited and that conduct certification tests for any stoves subject to subpart AAA and for forced-air furnaces under subpart QQQQ must achieve ISO-accreditation and approval from the EPA by November 16, 2015.

The extensions will reduce concerns about costs and potential testing delays for small laboratories. (Laboratories conducting certification tests for hydronic heaters covered by subpart QQQQ are already ISO-accredited because they participated in emission testing under the EPA's hydronic heater voluntary program. Therefore, no 6-month transition period is allowed for hydronic heaters that are required to conduct certification testing..)

Section 5.0 of this guide discusses what the rule requires of residential wood heater test laboratories.

3.3 Provisions for Third-Party Certifiers

Twelve-month extension for QA plan approval and certification of conformity: As noted in Section 3.1 of this guide, the third-party certifier has until 1 year after the rule's effective date (until May 16, 2016) to approve the manufacturer's QA plan and submit (on the manufacturer's behalf, if requested) the certification of conformity to the EPA. These extensions will allow both manufacturers and third-party certifiers enough time to contract with each other and finalize necessary QA procedures required under the rule.

Section 6.0 of this guide discusses what the rule requires of residential wood heater third-party certifiers.

3.4 Provisions for Retailers, Wholesalers, Importers and Distributors

Sell-through until December 31, 2015: Based on numerous comments from small business manufacturers, small business retailers and some states, we lengthened our proposed sell-through period for subpart AAA (from 6 months) to December 31, 2015 (nearly 8 months after the rule's effective date). Wood stoves *manufactured prior to May 15, 2015* may be sold at retail, wholesale, imported and distributed through December 31, 2015. To minimize stranded inventory, this sell-through provision applies even if these wood stoves do not meet the Step 1 standard. No manufacturer, distributor, wholesaler, importer or retailer may sell or offer to sell new stoves after December 31, 2015, that do not meet the 2015 emission limits. Eight months will better cover the primary selling period. We are also providing the same sell-through period until December 31, 2015 for hydronic heaters covered by subpart QQQQ to cover the primary selling period. We are not allowing a sell-through period for forced-air furnaces because the manufacturers and retailers can quickly revise and replace the owner's manuals to add best burn practices to comply with the work practice and operational standards.

Section 7.0 of this guide discusses what the rule requires of residential wood heater retailers, wholesalers, importers and distributors.

3.5 Provisions for Owners and Operators

This rule is a New Source Performance Standard (NSPS) and as such does not regulate existing wood heaters in people's homes. The EPA is not requiring consumers to purchase a new wood heater, nor to make changes to their existing wood heater. We are requiring that newly manufactured wood heaters meet the PM emission limits specified in the rule so that, when a consumer purchases a new wood heater, the heater will be cleaner burning and more efficient.

Section 8.0 of this guide discusses provisions of the rule that apply to residential wood heater owners and operators.

We are continuing to provide educational and informational material to owners and operators regarding best burn practices. Information specific to each heater is required to be detailed in each owner's manual, and resources for additional information regarding wood heating in general are provided in Section 10.3 of this guide under *Where can I find other guidance about residential wood heating?*

4.0 What Does the Rule Require of Residential Wood Heater Manufacturers?

This section discusses the rule's requirements for residential wood heater manufacturers. The four basic components of the rule's requirements affecting manufacturers include: (1) model lines certified to meet emission limits, (2) continued QA of model lines, (3) labeling of individual models, and (4) reporting and recordkeeping. This section also includes a subsection discussing a manufacturer's options in response to a denial or revocation of certification by EPA. Finally, Figure 1 in Section 4.6 provides an overall schematic of the typical steps required of manufacturers to comply with the rule.

4.1 Model Lines Certified to Meet Emission Limits

Mandatory emission limits and compliance dates: Each residential wood heater must be certified to comply with the applicable emission standards and other requirements of the rule. **After May 15, 2015, all newly manufactured residential wood heaters intended for sale in the U.S. must meet the applicable emission limits and/or work practice standards contained in the rule.** Subpart AAA of the rule specifies the emission limits and standards that **adjustable burn rate wood stoves** (catalytic, non-catalytic and hybrid stoves), **single burn rate wood stoves** and **pellet stoves** must meet (see §60.532). **Subpart QQQQ** of the rule specifies the emission limits and standards that **hydronic heaters** and **forced-air furnaces** must meet (see §60.5474).

The stepped standards include **PM emission limits with a 2015 compliance date of May 15, 2015 for all heaters except forced-air furnaces.** For forced-air furnaces, the 2015 standard is bifurcated with different compliance dates depending on the size of the furnace. A **work practice/operational standard is required for all forced-air furnaces on May 15, 2015**, while a **PM emission limit is required on May 16, 2016 for small forced-air furnaces** (capable of a maximum heat output of less than 65,000 BTU per hour) and **on May 15, 2017 for large forced-air furnaces** (capable of a heat output of 65,000 BTU per hour or greater).

For all stoves/heaters (including forced-air furnaces of any size), the **2020 emission limit must be met by May 15, 2020.** Table 4-1 summarizes the standards, including emission limits and work practice standards, which must be met by each compliance date.

Manufacturers interested in selling their residential wood heater in the U.S. must provide proof to the EPA that a given model line is certified to meet the emission limit by the compliance date for each standard. To ease the transition to the regulatory requirements of this rule, manufacturers have several options which constitute proof of compliance with the 2015 emission limits, including already possessing certain certifications or qualifications, which show emissions to be less than or equal to the applicable 2015 limit. Proof of such automatic compliance includes: a current EPA certification under the 1988 NSPS (for a wood stove model); a current qualification under the EPA Phase 2 voluntary hydronic heater program (dated October 12, 2011, under which a model has been tested with the revised EPA Method 28 WHH); a current qualification under the RHHY program (for a pellet hydronic heater model); a current NYSDEC certification (for a hydronic heater or forced-air furnace model); and a current CSA B415.1-10 third-party certification (for a forced-air furnace model). This list of certifications and qualifications, showing compliance with the 2015 limit, allows a model line to be deemed automatically certified to the 2015 standard until the 2020 compliance date, with no additional certifications or paperwork required. See Section 3.1 of this guide for more details.

Aside from the models eligible for the automatic compliance provisions noted above, manufacturers must obtain a certificate of compliance from EPA via the third-party certification process outlined in the rule (see §60.533 for subpart AAA and §60.5475 for subpart QQQQ). This process, discussed in further detail in this section, must be used starting May 15, 2015—and by May 2016 and 2017 for small and large forced-air furnaces, respectively—for manufacturers not holding an eligible certification or qualification allowing for automatic compliance until the 2020 standards. (To ease the regulatory transition, certain extensions to the requirements of the third-party certification process apply, as discussed in Section 3.1 of this guide.) By the 2020 standards, the third-party certification process must be used by all manufacturers to certify compliance with the May 15, 2020 standards.

Table 4-1. 2015 and 2020 Standards and Compliance Dates

Affected Wood Heater	2015 / 2016 / 2017 Standards	2020 Standards
Adjustable burn rate stoves, single burn rate stoves and pellet stoves (Subpart AAA)	PM emission limit \leq 4.5 g/hr (using crib, pellets or cord wood) On May 15, 2015 <i>See §60.532(a)</i>	PM emission limit \leq 2.0 g/hr (using crib wood or pellets) On May 15, 2020 <i>See §60.532(b);</i> Or PM emission limit \leq 2.5 g/hr (using cord wood) On May 15, 2020 <i>See §60.532(c)</i>
Hydronic heaters (Subpart QQQQ)	PM emission limit \leq 0.32 lb/mmBtu heat output (weighted average) and a cap of 18 g/hr for each individual burn rate (using crib, pellets or cord wood) On May 15, 2015 <i>See §60.5474(b)(1)</i>	PM emission limit \leq 0.10 lb/mmBtu heat output for each individual burn rate (using crib wood or pellets) On May 15, 2020 <i>See §60.5474(b)(2);</i> Or PM emission limit \leq 0.15 lb/mmBtu heat output for each individual burn rate (using cord wood) On May 15, 2020 <i>See §60.5474(b)(3)</i>
Small forced-air furnaces, < 65,000 BTU per hour (Subpart QQQQ)	Work practice and operational standard on May 15, 2015 <i>See §60.5474(a)(3)</i>	PM emission limit \leq 0.15 lb/mmBtu heat output (individual burn rate, using cord wood or pellets) On May 15, 2020 <i>See §60.5474(b)(6)</i>
	PM emission limit \leq 0.93 lb/mmBtu heat output (weighted average, using cord wood or pellets) On May 16, 2016 <i>See §60.5474(b)(4)</i>	
Large forced-air furnaces, \geq 65,000 BTU per hour (Subpart QQQQ)	Work practice and operational standard on May 15, 2015 <i>See §60.5474(a)(3)</i>	PM emission limit \leq 0.15 lb/mmBtu heat output (individual burn rate, using cord wood or pellets) On May 15, 2020 <i>See §60.5474(b)(6)</i>
	PM emission limit \leq 0.93 lb/mmBtu heat output (weighted average, using cord wood or pellets) On May 15, 2017 <i>See §60.5474(b)(5)</i>	

Certification Testing and Third-party certification process: In addition to designing a compliant wood heater model (e.g., through R&D), the manufacturer must contract with an ISO-accredited EPA-approved lab to perform certification testing and must also contract with an ISO-accredited EPA-approved third-party certifier for certification services. After the contracts are in place, the third-party certifier and/or lab may act on the manufacturer's behalf, although all responsibility for the model line rests with the manufacturer. The manufacturer must notify EPA at least 30 days before the start of testing. **Certification testing must be conducted by an ISO-accredited EPA-approved lab according to the test methods specified in the rule** or by an alternative test method approved by the EPA Administrator. During certification testing by the approved lab, manufacturers must not involve themselves in the conduct of the test after the pretest burn has begun. (Section 5.2 of this guide regarding lab testing discusses the allowed communications during testing.)

A valid certification test means a test that the EPA Administrator was notified about, that was conducted by an approved test lab, that was conducted on a wood heater similar (in all ways that would affect emissions) to the wood heaters in the model line to be certified, and that was conducted according to the test methods & procedures specified in the rule.

In addition to obtaining valid certification test results from the lab showing the model to be compliant with the standard, the **manufacturer must apply to the third-party certifier for a certification of conformity.** To do so, the manufacturer must submit to its

To avoid the possibility of a conflict of interest, it should be noted that the rule prohibits the lab to perform the certification test – and also prohibits the third-party certifier from performing initial certification reviews – on any models for which the lab or third-party certifier has conducted R&D design services within the last 5 years.

contracted third-party certifier the certification test results, the manufacturer's QA plan, and 14 other items, which will ultimately be submitted to the EPA as part of the application for a certificate of compliance. (The list of 15 required documentation items is shown on the next page of this guide.) The third-party certifier may certify conformity if the following conditions are all true: (a) the emission tests have been conducted per the regulatory requirements; (b) the test report is complete and accurate; (c) the instrumentation used for the test was properly

calibrated; (d) the test report shows that the wood heater meets the applicable emission limits; and (e) the manufacturer's QA plan is adequate to ensure that units within the model line will be similar in all material respects that would affect emissions to the wood heater model submitted for certification testing and to ensure that the model line's units will meet all other applicable requirements of the rule (e.g., owner's manual, appropriate permanent label, temperature sensor for catalytic heaters).

Application to the EPA for a certificate of compliance: The manufacturer (or an authorized representative) must then **submit to the EPA an application for a certificate of compliance** that includes (a) **the third-party certifier's certification of conformity;** (b) **the manufacturer's QA plan;** (c) **the certification test report;** (d) **all supporting documentation** listed below as 15 items; and (e) a **statement signed by the manufacturer** that the manufacturer has complied with and will continue to comply with all requirements for a certificate of compliance and that the manufacturer remains responsible for compliance, regardless of any error by the test laboratory or third-party certifier.

It should again be noted that, to minimize certification logjam concerns, the rule allows until May 16, 2016 for manufacturers to obtain approval of their QA plans from the third-party certifier and submit the certification of conformity to the EPA. (In the meantime, EPA will issue a temporary, one-year

conditional certificate of compliance if all other components of the application are in order, as explained in Section 3.1 of this guide.)

The list of documents to be submitted as part of the application to EPA is explained in the rule in §60.533(b) for subpart AAA and §60.5475(b) for subpart QQQQ. **Supporting documentation required for the application to EPA includes:**

- (1) the model name and design number;
- (2) engineering drawings and specifications of components that may affect emissions (See §60.533(k) for subpart AAA and §60.5475(k) for subpart QQQQ for the “k list” of such components);
- (3) a statement whether the firebox or any firebox component will be composed of material different from the material used in the model on which certification testing was performed, a description of any such differences and demonstration that any such differences may not reasonably be anticipated to adversely affect emissions or efficiency;
- (4) clear identification of any claimed confidential business information (CBI);
- (5) all documentation pertaining to a valid certification test, including the complete test report and raw data sheets, laboratory technician notes, calculations and test results for every test run (See §60.533(b)(5) for subpart AAA and §60.5475(b)(5) for subpart QQQQ for additional instructions);
- (6) a copy of the warranties for the model line, which must include a statement that the warranties are void if the unit is used to burn materials for which the unit is not certified by the EPA and void if not operated according to the owner’s manual;
- (7) a statement that the manufacturer will conduct a QA program for the model line that satisfies the requirements of the rule;
- (8) a statement describing how the tested unit was sealed by the laboratory after the completion of certification testing and asserting that this unit will be stored by the manufacturer in the sealed state until 5 years after the certification test;
- (9) statements that the model line’s wood heaters manufactured under this certificate will be similar in all material respects that would affect emissions to the wood heater submitted for certification testing, will be labeled according to the rule’s requirements, and will be accompanied by an owner’s manual meeting the rule’s requirements (a copy of which will be submitted to the EPA and be available to the public on the manufacturer’s web site);
- (10) a statement that the manufacturer has contracted with an ISO-accredited approved lab and an ISO-accredited approved third-party certifier in satisfaction of the requirements of the rule;
- (11) a statement that the approved laboratory and approved third-party certifier are allowed to submit information on behalf of the manufacturer, including any claimed to be CBI;
- (12) a statement that the manufacturer will place a copy of the certification test report and summary on the manufacturer’s web site available to the public within 30 days after the EPA Administrator issues a certificate of compliance;
- (13) a statement of acknowledgment that the certificate of compliance cannot be transferred to another manufacturer or model line without written approval by the EPA Administrator;
- (14) a statement acknowledging that it is unlawful to sell, distribute or offer to sell or distribute an affected wood heater without a valid certificate of compliance; and

*Note that all emissions data **cannot** be claimed as CBI, including all information necessary either to determine emission rates in the format of the standard (e.g., g/hr, lb/mmBtu), or to determine whether the source is in compliance with an applicable standard or limitation.,. 40 CFR 2.301(a)(2).
<http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol1/pdf/CFR-2010-title40-vol1-sec2-301.pdf>*

(15) contact information for the responsible representative of the manufacturer and all authorized representatives, including name, affiliation, physical address, telephone number and email address.

*The application for the certificate of compliance must be submitted to **WoodHeaterReports@epa.gov** and signed by the manufacturer (or an authorized representative).*

The EPA Administrator will issue to the manufacturer a certificate of compliance for the model line if:

- a valid certification of conformity has demonstrated that the representative model complies with the applicable emission limits;
- any tolerances or materials for “k list” components listed in §60.533(k) or §60.5475(k) that are different from those specified may not be reasonably anticipated to cause wood heaters in the model line to exceed the applicable emission limits;
- all requirements for supporting documentation (list of 15 above) have been met; and
- a valid certificate of conformity for the model line has been prepared and submitted.

The EPA Administrator will deny certification if any of the criteria for approval have not been satisfied and will give written notice to the manufacturer explaining the basis for the denial.

Certification period: If approved, the EPA Administrator will issue the certificate of compliance for the most stringent PM emission standard that the tested representative model meets under the rule. As noted in §60.533(h) and §60.5475(h), this **certificate of compliance is valid for 5 years** from the date of issuance **or until a more stringent standard comes into effect** (e.g., the 2020 standard), whichever is sooner.

Renewals: The manufacturer **must renew** a model line's **certificate of compliance** or recertify the model line **every 5 years**, as noted in §60.533(i) and §60.5475(i), or the manufacturer may choose to no longer manufacture or sell that model line after the expiration date. If a manufacturer applies to the EPA Administrator for a potential renewal of its certificate of compliance, the application may be a full application, containing all items required in an initial application for a certificate of compliance. Or, **if nothing in the model line’s design has substantively changed** (according to the “k list” changes presumed to affect emissions), the manufacturer may request a potential waiver from certification testing. This request must include an affirmation in writing that the heaters in the model line continue to be similar in all material respects that would affect emissions to the representative model submitted for testing (on which the original certificate of compliance was based). **The manufacturer’s contracted third-party certifier must review and approve the renewal application** prior to its submission to EPA. If the EPA

*A **model line** means all wood heaters offered for sale by a single manufacturer that are similar in all material aspects that would affect emissions.*

See the “k list” changes presumed to affect emissions which trigger the recertification requirement in §60.533(k) or §60.5475(k)

denies the renewal, the manufacturer (and retailer) must not manufacture (or sell) the previously certified heaters after the expiration date of compliance.

Recertification: As noted in §60.533(k) and §60.5475(k), the manufacturer **must recertify** a model line **whenever any change is made in the design** that affects, or is presumed to affect, the PM or carbon monoxide (CO) emission rate or efficiency for that model line (e.g., a “k list” change). Similar to the process noted above for renewals, the application to the EPA Administrator may be a full application, containing all the items required in an initial application for a certificate of compliance. Alternatively, the recertification application may be a request for a waiver from certification testing and must include an affirmation in writing that the change (triggering the recertification application) will not cause the

heaters in the model line to exceed applicable emission limits. The **application for recertification must include an engineering diagram supporting the design change request, must be reviewed and approved by the contracted third-party certifier**, and a copy of the review and approval must be included in the application to EPA. If the manufacturer presents adequate rationale and the EPA Administrator determines that the change may not reasonably be anticipated to cause heaters in the model line to exceed the applicable emission limits, the EPA may waive the (re)certification testing requirement. However, it should be noted that the granting by EPA of such a certification testing waiver does not relieve the manufacturer of any compliance obligations.

Recertifying a design owned and certified by another entity: A waiver from submitting test results may also be pursued by manufacturers seeking to produce heaters based on a certified design owned by another entity (e.g., person, manufacturing company). That is, the manufacturer may apply for a waiver from testing – if the wood heaters in the model line are similar in all material respects that would affect emissions to another model line that has already been issued a certificate of compliance. To do this, the manufacturer must identify the certified model line and submit a copy to the EPA of the agreement with the owner of the design (permitting the applicant/manufacturer to produce heaters of that design).

4.2 Quality Assurance of Model Lines

Manufacturer’s third-party certified QA program: Manufacturers are required to have QA programs to ensure that all heaters within the model line conform to the certified design and meet the applicable emission limits and other requirements of the rule. The manufacturer’s prepared QA plan is part of their QA program and is an essential requirement for the third-party certifier’s certification of conformity. On or after **May 16, 2016**, for each certified model line, **the manufacturer must conduct a QA program** that satisfies the requirements listed in Table 4-2. As noted previously, the manufacturer is allowed an extra year to conduct the required QA program and to submit the QA plan – that is, the manufacturer (or an authorized representative) must submit the QA plan along with the certification of conformity to the EPA Administrator by May 16, 2016 in order to continue manufacturing and selling residential wood heaters. This one-year extension will not apply to the 2020 standards. By the 2020 standards, manufacturers are required to conduct a QA program and submit their QA plan with their certification of conformity by May 15, 2020.

Table 4-2.

Manufacturer’s Quality Assurance (QA) Program Requirements under Rule <i>(These requirements are in §60.533(m) for subpart AAA and §60.5475(m) for subpart QQQQ)</i>
(1) The manufacturer must prepare and operate according to a QA plan for each certified model line. The QA plan must include inspection and testing to ensure that all model line units are similar, in all material respects affecting emissions, to the tested/certified model and that all units meet the applicable emissions standard.
(2) The QA plan must be approved by the third-party certifier as part of the certification of conformity.
(3) The QA plan must include regular (at least annual) unannounced audits by the third-party certifier under ISO-IEC Standard 17065 to ensure that the manufacturer’s QA plan is being implemented.
(4) The QA plan must include a report for each audit under ISO-IEC Standard 17065 that fully documents the results of the audit. The third-party certifier must be authorized and required to submit all such reports to the EPA Administrator and the manufacturer within 30 days of the audit. The audit report must identify deviations from the manufacturer’s QA plan and specify the corrective actions that need to be taken to address each identified deficiency.

(5) Within 30 days after receiving each audit report, the manufacturer must report to the third-party certifier and to the Administrator its corrective actions and responses to any deficiencies identified in the audit report. No such report is required if an audit report did not identify any deficiencies.

The manufacturer must submit its QA plan to its contracted third-party certifier, including design drawings for the model line, to ensure that units within the model line will be similar in all material respects that would affect emissions to the wood heater submitted for certification testing. As presented in Table 4-2, the manufacturer's contract with the third-party certifier must also include regular (at least annual) unannounced audits by the third-party certifier under ISO-IEC Standard 17065 to ensure that the manufacturer's QA plan is being implemented properly. The contract must also include a report for each audit that fully documents the results of the audit, as well as authorization and requirement for the third-party certifier to submit the audit report to the EPA within 30 days of the audit. This audit report will identify deviations from the manufacturer's QA plan and specify the corrective actions that the manufacturer must take to address each identified deficiency. If deficiencies were indicated, the manufacturer must report its corrective actions to the third-party certifier and to the EPA within 30 days of receiving the audit report from the third-party certifier.

EPA compliance audit testing: Another quality assurance built into the rule is the EPA's ability to conduct compliance audits on specific wood heaters or model lines of the EPA's choosing. If a manufacturer's product is selected by the EPA for compliance audit testing, the EPA Administrator will notify the manufacturer in writing of the selected heaters/model lines (name and serial number) to test and identify the laboratory who will perform the audit test. The EPA will notify the manufacturer (and selected laboratory) at least 30 days in advance. The audit test will be conducted using the same test method used to obtain certification and the manufacturer (and/or an authorized representative) may observe the audit test. The EPA will revoke certification if an audited wood heater exceeds the applicable emission limits, as discussed further in Section 4.5 of this guide.

The expense of the compliance audit test is the responsibility of the wood heater manufacturer (not the laboratory). The EPA plans to use audit tests judiciously, in cases where potential changes have been made to a model line since certification that should have triggered recertification, or in the case of concerns regarding fraudulent activity. Section 4.5 of this guide discusses a manufacturer's options in response to EPA actions based on audit results.

4.3 Labeling and Owner's Manuals

Required permanent label: Each residential wood heater subject to the rule, manufactured on or after the date the applicable standards come into effect (as listed in Table 4-1), must have a permanent label affixed to it that meets the requirements of the rule. Rule requirements regarding permanent labels may be found in §60.536 (a through e) for subpart AAA and in §60.5478 (a through d) for subpart QQQQ.

For all regulated residential wood heaters, the permanent labels must meet the following requirements:

- Be at least 8.9 cm long and 5.1 cm wide (3½ inches long and 2 inches wide);
- Be made of a material expected to last the lifetime of the wood heater;
- Present the required information in a manner so that it is likely to remain legible for the lifetime of the wood heater; and
- Be affixed in such a manner that it cannot be removed from the appliance without damage to the label.

The statements and information required on the permanent labels are presented in Table 4-3 for room heaters subject to subpart AAA (wood stoves, pellet stoves and single burn rate stoves) and in Table 4-4 for central heaters subject to subpart QQQQ (hydronic heaters and forced-air furnaces).

Optional temporary label (hangtag): Manufacturers whose model(s) meet the 2020 standards early or whose model(s) comply with the 2020 cord wood alternative limit have the option to use temporary labels or hangtags. The hangtags are not required and are noted in the rule in §60.536(f) for subpart AAA and in §60.5478(e) for subpart QQQQ.

- Each model line certified to meet the 2020 particulate emission standards prior to May 15, 2020 may display a hangtag. This voluntary option ends on May 15, 2020.
- Each model certified to meet the 2020 Cord Wood Alternative Compliance Option may display the cord wood hangtag. Note that this optional hangtag applies to wood stoves regulated under subpart AAA and to hydronic heaters regulated under subpart QQQQ, not to forced-air furnaces, because the test method for forced-air furnaces on which the standard is based *requires* cord wood.

In accordance with Appendix I, Section 3 of the rule, EPA will provide a hangtag template upon request.

Compliance with §60.538 and §60.5480 of the rule: If a manufacturer offers a residential wood heater for sale, the requirements listed in §60.538 and §60.5480 of the rule and in Section 7.0 of this guide apply and must be followed.

**Table 4-3. Permanent Label Requirements under Subpart AAA:
Adjustable Burn Rate Stoves, Single Burn Rate Stoves and Pellet Stoves**

Applicability	Required Label Statement	Required Label Information & Additional Statement
Adjustable burn rate stoves and pellet stoves that certify to meet 2015 limit	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2015 particulate emission standards. Not approved for sale after May 15, 2020.”	<p>Month and year of manufacture of the individual unit;</p> <p>Model name or number;</p> <p>Certification test emission value, test method and standard met with test fuel identified (<i>e.g.</i>, 2015 crib wood, 2015 cord wood, 2015 pellet, or other fuel, and likewise for 2020);</p> <p>Serial number; and</p> <p>Additional required statement: “This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.”</p>
Adjustable burn rate stoves and pellet stoves that certify to meet 2020 limit using crib wood and pellets, respectively	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards.”	
Adjustable burn rate stoves that certify to meet 2020 limit using cord wood	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.”	
Single burn rate stoves that certify to meet 2015 limit	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2015 particulate emission standards for single burn rate heaters. Not approved for sale after May 15, 2020. This single burn rate wood heater is not approved for use with a flue damper.”	
Single burn rate stoves that certify to meet 2020 limit	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards for single burn rate heaters. This single burn rate wood heater is not approved for use with a flue damper.”	
Exempted export wood stoves	“U.S. ENVIRONMENTAL PROTECTION AGENCY Export stove. May not be sold or operated within the United States.”	
Exempted R&D wood stoves	“U.S. ENVIRONMENTAL PROTECTION AGENCY Not certified. Research Stove. Not approved for sale or for operation other than for research.”	
Exempted non-wood burning heaters	“U.S. ENVIRONMENTAL PROTECTION AGENCY This heater is not certified for wood burning. Use of any wood fuel is a violation of federal regulations.”	
Exempted cook stoves	“U.S. ENVIRONMENTAL PROTECTION AGENCY This unit is not a certified residential wood heater. The primary use for this unit is for cooking or baking.”	
Exempted camp stoves	“U.S. ENVIRONMENTAL PROTECTION AGENCY This unit is not a certified residential wood heater. For portable and temporary use only.”	

**Table 4-4. Permanent Label Requirements under Subpart QQQQ:
Hydronic Heaters and Forced-Air Furnaces**

Applicability	Required Label Statement	Required Label Information & Additional Statement
Hydronic heaters that certify to meet 2015 limit	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2015 particulate emission standards. Not approved for sale after May 15, 2020.”	<p>Month and year of manufacture of the individual unit;</p> <p>Model name or number;</p> <p>Certification test emission value, test method and standard met with test fuel identified (<i>e.g.</i>, 2015 crib wood, 2015 cord wood, or 2015 pellet, or other fuel, and likewise for 2020);</p> <p>Serial number; and</p> <p>Additional required statement: “This appliance needs periodic inspection and repair for proper operation. Consult owner's manual for further information. It is against federal regulations to operate this appliance in a manner inconsistent with operating instructions in the owner's manual.”</p>
Forced-air furnaces (small) that certify to meet 2016 limit	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with the 2016 particulate emission standards. Not approved for sale after May 15, 2020”	
Forced-air furnaces (large) that certify to meet 2017 limit	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with the 2017 particulate emission standards. Not approved for sale after May 15, 2020”	
Hydronic heaters that certify to meet 2020 limit using crib wood or pellets	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with the 2020 particulate emission standards.”	
Hydronic heaters and forced-air furnaces that certify to meet 2020 limit using cord wood	“U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with the 2020 particulate emission standards using cord wood.”	
Exempted export central heater	“U.S. ENVIRONMENTAL PROTECTION AGENCY Export appliance. May not be sold or operated in the United States.”	
Exempted R&D central heater	“U.S. ENVIRONMENTAL PROTECTION AGENCY Not certified. Research Appliance. Not approved for sale or for operation other than for research.”	
Exempted non-wood burning central heater	“U.S. ENVIRONMENTAL PROTECTION AGENCY This appliance is not certified for wood burning. Use of any wood fuel is a violation of federal regulations.”	

Owner's manual requirements: Each residential wood heater subject to the rule and offered for sale by a commercial owner must be accompanied by an owner's manual that contains the information required by the rule. The rule's requirements for owner's manuals may be found in §60.536(g) for subpart AAA and in §60.5478(f) for subpart QQQQ. In general, the rule requires that the owner's manuals cover the following installation and operation & maintenance issues:

- **Guidance on proper installation**, including stack height, location and achieving proper draft:
 - Importance of proper draft;
 - Conditions indicating inadequate draft;
 - Conditions indicating excessive draft; and
 - Guidance on proper stack height and proper heater locations (*i.e.*, not too close to neighbors or in valleys that would cause unhealthy air quality or nuisance conditions).

- **Proper operation and maintenance information**, including minimizing visible emissions:
 - Fuel loading and re-loading procedures; recommendations on fuel selection and warnings on what fuels not to use, such as unseasoned wood, inappropriate pellet classifications, treated wood, colored paper, cardboard, solvents, trash and garbage (*See* Table 8-1 of this guide for a list of prohibited fuels and see Section 8.2 of this guide for pellet and chip wood fuel minimum requirements);
 - Fire starting procedures;
 - Proper use of feed and air controls, including how to establish good combustion and how to ensure good combustion at the lowest burn rate for which the heater is warranted;
 - Ash removal procedures;
 - Instructions for replacement of gaskets, air tubes and other parts that are critical to the emissions performance of the unit, and other maintenance and repair instructions;
 - For catalytic or hybrid models, information on the following pertaining to the catalytic combustor: procedures for achieving and maintaining catalyst activity, maintenance procedures, procedures for determining deterioration or failure, procedures for replacement and information on how to exercise warranty rights;
 - For catalytic or hybrid models, the following statement must appear in the owner's manual - "This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual, or if the catalytic element is deactivated or removed."
 - For all models, including both catalytic and noncatalytic models, the following statement must appear in the owner's manual - "This wood heater needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual."
 - For all models, the following tamper warning must appear in the owner's manual - "This wood heater has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this manual."

Appendix I of the rule provides specific instructions and examples to manufacturers for compliance with the above requirements. **Any manufacturer using the EPA-recommended language contained in Appendix I will be considered to be in compliance with the owner's manual requirements**, provided that the particular language is printed in full, with only such changes as are necessary to ensure accuracy for the particular wood heater model line.

In addition to the above list of requirements, as detailed in Appendix I, the wood heater's instruction (owner's) manual must include: a description of the wood heater model and its compliance status (*e.g.*, 2015 or 2020 standard, last allowable sell date); the unit's heat output range; the manufacturer's name, address and phone number; warranty details and instructions for warranty claims. For catalytic and hybrid stoves, Appendix I includes details regarding several sections in the owner's manuals concerning achieving and maintaining catalyst light-off, catalyst monitoring, catalyst troubleshooting and catalyst replacement.

As noted above, owner's manuals must include instructions on acceptable fuels and a warning against inappropriate fuels. This warning should include a "Do Not Burn" list as detailed in Appendix I and in Section 8.1 of this compliance guide. The owner's manual must also note the importance of seasoned wood and provide instructions on how to determine seasoned wood compared to unseasoned wood, including how to use moisture meters and other techniques.

Owner's manual requirements regarding efficiency: The owner's manual must include a description of how the efficiency was determined (*e.g.*, using higher heating value of the fuel instead of the lower heating value, discussing sweet spot versus annual average versus annual fuel usage efficiency [AFUE]). The owner's manual must also discuss how operation and fuel affect efficiency (*e.g.*, seasoned wood versus high moisture fuel, operation at sweet spot versus low-burn categories). Finally, the owner's manual must discuss how location affects efficiency (*e.g.*, in main living area versus basement versus outdoors in sub-freezing temperatures).

Owner's manual requirements regarding carbon monoxide emissions and monitors: Regarding carbon monoxide (CO) emissions, the owner's manuals must include a discussion of smoke and CO emissions, including the CO data submitted in the certification application and expected variations for different operating conditions. The owner's manuals must also include a recommendation to have a smoke monitor/CO detector, especially in areas that are expected to generate CO (*e.g.*, heater fueling areas, pellet fuel bulk storage areas, sheds containing hydronic heaters). Note also that the manufacturer must report CO results to the EPA and include those results on the manufacturer's website, so that data will be available to consumers and to the EPA and States for CO National Ambient Air Quality Standards (NAAQS) compliance implementation plan considerations, as well as for future wood heater rulemakings.

4.4 Reporting and Recordkeeping

Reporting and notification requirements: Each manufacturer or authorized representative must submit the following reports to EPA, as specified in §60.537 for subpart AAA and in §60.5479 for subpart QQQQ (and as specified elsewhere in the rule, as noted below):

- **Notification of testing:** The manufacturer must notify the EPA Administrator of the date that certification testing is scheduled to begin by email to **WoodHeaterReports@epa.gov**. This notice must be received by the EPA at least 30 days before the start of testing. The notification of testing must include the manufacturer's name and physical and email addresses, the approved test laboratory's name and physical and email addresses, the third-party certifier name, the model name and number (or, if unavailable, some other way to distinguish between models), and the dates of testing. This requirement may be found in §60.534(g) for subpart AAA and in §60.5476(h) for subpart QQQQ.

- **Application material for a certificate of compliance:** In order to obtain a certificate of compliance from the EPA Administrator, the manufacturer must submit to the EPA an application that includes the third-party certifier's **certification of conformity**, the manufacturer's **QA plan**, the **test report** and **all supporting documentation** specified in §60.533(b) or §60.5475(b) and listed in Section 4.1 of this guide.
- **Submittal of test results:** Within 60 days after the date of completing each performance test (*e.g.*, initial certification test, tests conducted for quality assurance, and tests for renewal or recertification) each manufacturer must submit the performance test data electronically to **WoodHeaterReports@epa.gov**. Manufacturers who claim that some of the information being submitted is confidential business information (CBI), such as design drawings, must submit a complete file, including the information claimed to be CBI, on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) by mail, and the same file, with the CBI omitted, electronically. The compact disk must be clearly marked as CBI and mailed to U.S. EPA, OECA CBI Office, Attention: Residential Wood Heater Compliance Program Lead, 1200 Pennsylvania Avenue NW., Washington, DC 20004. Emission data, including all information necessary to determine compliance, except sensitive engineering drawings and sensitive detailed material specifications, may not be claimed as CBI. (Note: For a complete list of submittals required in an application for a certificate of compliance, see §60.533(b and f) for subpart AAA and §60.5475(b and f) for subpart QQQQ.)
- **Reporting of corrective actions:** Within 30 days after receiving each audit report from the third-party certifier under the manufacturer's QA program requirements (in §60.533(m) for subpart AAA and in §60.5475(m) for subpart QQQQ), the manufacturer must report to the third-party certifier and to the EPA Administrator its corrective actions and responses to any deficiencies identified in the audit report. No such report is required if an audit report did not identify any deficiencies.
- **Reporting of sales:** Every 2 years, each manufacturer of a certified model line must submit a report to the EPA Administrator that includes the sales for each model by state and which also certifies that no changes in the design or manufacture of this model line have been made that require recertification.
- **Notification of discontinuation:** If a manufacturer chooses to no longer manufacture (or sell) a model line, the manufacturer must submit a statement to the EPA Administrator to that effect (as required in §60.533(i) for subpart AAA and §60.5475(i) for subpart QQQQ).

Furthermore, within 30 days of receiving a certification of compliance for a model line, the manufacturer must **make the full non-CBI test report and the summary of the test report available to the public on the manufacturer's Web site**. Note that if a model line is re-tested as part of a recertification, the new test report should be posted on the manufacturer's Web site. In general, the applicable certification test report should remain posted on the manufacturer's Web site for as long as that model line is offered for sale in the U.S.

Recordkeeping requirements: Each manufacturer who holds a certificate of compliance for a model line must maintain the following records with respect to that model line for at least 5 years (as specified in §60.537 for subpart AAA and in §60.5479 for subpart QQQQ):

- **Test records:** All documentation must be retained pertaining to the test used to obtain certification, including the full test report and raw data sheets, laboratory technician notes, calculations, the test results for all test runs, and discussions of the appropriateness and validity of all test runs, including runs attempted but not completed. The retained certification test documentation must include, as applicable, detailed discussion of all anomalies, whether all burn rate categories were properly achieved, any data not used in the calculations and, for any test runs not completed, the data that were collected and the reason that the test run was not completed. The retained certification test also must include documentation that the burn rate for the low burn rate category was no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer.
- **Quality assurance inspection records:** Results of the QA program inspections must be retained.
- **Quality assurance test records:** For emissions tests conducted pursuant to the QA program requirements, all test reports, data sheets, laboratory technician notes, calculations, and test results for all test runs, the corrective actions taken, if any, and any follow-up actions such as additional testing must be retained.
- **Biennial sales records:** Each biennial report submitted to the EPA following issuance of a certificate of compliance (which includes the sales for each model by state and a certification that no changes in the design or manufacture of the model line have been made that would require recertification) must be retained.
- **Wood Heater model used for certification:** Each wood heater, upon which certification tests were performed and granted, must be retained at the manufacturer's facility for a minimum of 5 years after the certification test and must remain sealed and unaltered. Any such wood heater must be made available to the EPA upon request for inspection and testing.
- **Exempted R&D heater records:** Each manufacturer who uses the exemption for R&D heaters must maintain records for at least 5 years documenting where the heaters were located, that the heaters were never offered for sale or sold and that the heaters were not used for the purpose of heating.

4.5 Options for Responding to EPA Certification Denial or Revocation

In the cases of apparent non-compliance with the rule's requirements, the EPA Administrator will deny a manufacturer's application for a certificate of compliance, or revoke a manufacturer's existing certificate of compliance, or deny a manufacturer's recertification or renewal requests, as appropriate. The manufacturer has the option for a hearing and potentially for an appeal in response to EPA denials and revocations. The hearing and appeal procedures are outlined in §60.539 for manufacturers subject to subpart AAA and in §60.5481 for manufacturers subject to subpart QQQQ.

Criteria for denial of an application: Under the Administrator approval process (in §60.533(c) and §60.5475(c), in place prior to full implementation of the third-party certifier-based application process on May 16, 2016), the EPA may deny an initial application for a certificate of compliance for any of the following reasons:

- (i) lack of a valid certification test demonstrating that the representative wood heater complies with applicable emission standards in §60.532 and §60.5474;

- (ii) certain tolerances or materials for “k-list” components – under §60.533(k) and §60.5475(k) – may cause wood heaters in the model line to exceed applicable emission limits; or
- (iii) one or more of the requirements listed in the 15 mandatory submittals (under §60.533(b) and §60.5475(b) and in Section 4.1 of this guide) have not been met.

After May 16, 2016, full implementation of the third-party certifier-based application process will be underway. The EPA Administrator may deny certification or recertification based on the third-party based application process listed in §60.533(f) and §60.5475(f), for any of the following reasons:

- (i) lack of a valid certification of conformity demonstrating that the representative wood heater complies with the applicable emission standards in §60.532 and §60.5474;
- (ii) certain tolerances or materials for “k-list” components – under §60.533(k) and §60.5475(k) – may cause wood heaters in the model line to exceed applicable emission limits;
- (iii) one or more of the requirements listed in the 15 mandatory submittals (under §60.533(b) and §60.5475(b) and listed above in Section 4.1) have not been met; or
- (iv) a valid certificate of conformity for the model line has not been prepared and submitted.

The EPA Administrator may also deny a request for renewal or for recertification for any of the reasons listed above. If the EPA denies an application for a certification, recertification or renewal of compliance, the EPA will give written notice to the manufacturer explaining the basis for the denial. **The manufacturer may request a hearing under §60.539 and §60.5481**, as discussed further below.

Criteria for revocation of certification: The EPA may revoke an existing certification at any time if it is determined that wood heaters being manufactured or sold in a model line do not comply with the rule’s requirements. As listed in §60.533(l) and §60.5475(l), such a determination by the EPA will be based on all available evidence, including but not limited to the following:

- (i) test data from a retesting of the original unit on which the certification test was conducted or a unit that is similar in all material respects that would affect emissions;
- (ii) a finding that the certification test was not valid, based on problems or irregularities with the certification test or its documentation or by other supplemental information;
- (iii) a finding that the labeling of the wood heater model line, the owner's manual or the associated marketing information does not comply with the rule’s requirements (in §60.536 and §60.5478);
- (iv) failure by the manufacturer to comply with reporting and recordkeeping requirements (under §60.537 and §60.5479);
- (v) physical examination showing that a significant percentage (as defined in the manufacturer’s approved QA plan, but no larger than 1 percent) of production units

inspected are not similar in all material respects that would affect emissions to the representative wood heater submitted for certification testing;

- (vi) failure of the manufacturer to conduct a QA program in conformity with §60.533(m) and §60.5475(m); or
- (vii) failure of the approved laboratory to test the wood heater using the methods specified in §60.534 for heaters subject to subpart AAA and specified in §60.5476 for heaters subject to subpart QQQQ.

Such revocation of certification by the EPA will not take effect until the manufacturer concerned has been given written notice by the EPA Administrator explaining the basis for the proposed revocation and **an opportunity to request a hearing under §60.539 and §60.5481**, as discussed below.

Revocation of certification for failing EPA compliance audit testing: If the emissions from an audited wood heater – tested under EPA’s compliance audit testing in §60.533(n) and §60.5475(n) – exceed the applicable emission standard by more than 50% (using the same test method used to obtain certification), the EPA will inform the manufacturer that certification for that model line is suspended, effective 72 hours from receipt of the notice. The suspension will remain in effect for 30 days or until the EPA Administrator withdraws the suspension or revokes certification (whichever occurs first).

The EPA will revoke certification for a model line if emissions from the audited wood heater exceed the applicable emission limit. This revocation will be final and effective 60 days after written notification to the manufacturer, unless the EPA withdraws it. However, **the manufacturer may request a hearing under §60.539 and §60.5481** and the manufacturer may extend the deadline for requesting a hearing for up to 6 months by agreeing to a voluntary suspension of certification. (The EPA may also extend the deadline for requesting a hearing for up to 60 days for good cause.)

Upon receiving notification of an audit test failure, the manufacturer may request that up to four additional wood heaters from the same model line be tested (at the manufacturer's expense), at the test laboratory that performed the emissions test for the EPA Administrator. The manufacturer may submit any relevant information to the EPA, including any other test data generated from the testing of the additional heaters. The EPA Administrator may decide not to revoke certification, if the EPA finds that an audit test failure has been rebutted by information submitted by the manufacturer or by any other relevant information available to the EPA. Furthermore, if all four additionally tested heaters meet the applicable emission limit, or if the average of two additionally tested heaters plus the originally audited heater meet the applicable emission limit, then the EPA Administrator will withdraw the suspension and/or revocation notice. The EPA will also revise the certification values for the model line based on the audit test data and other relevant information. The manufacturer must then revise the model line's labels and marketing information accordingly.

Manufacturer’s options for hearings and appeals: Within 30 days following receipt of the required notification from the EPA Administrator in the event of denial or revocation (as discussed above), the manufacturer may request a hearing under §60.539 and §60.5481. This hearing request must be in writing, must be signed by an authorized representative of the manufacturer and must include a specific, detailed statement explaining the manufacturer’s objection to the EPA’s denial or revocation (or proposed denial or revocation). Generally, an Administrative Law Judge will serve as Presiding Officer in a hearing and the hearing will commence as soon as practicable at a time and place set by the Presiding Officer. The general procedural rules of these hearings are discussed in §60.539 and §60.5481.

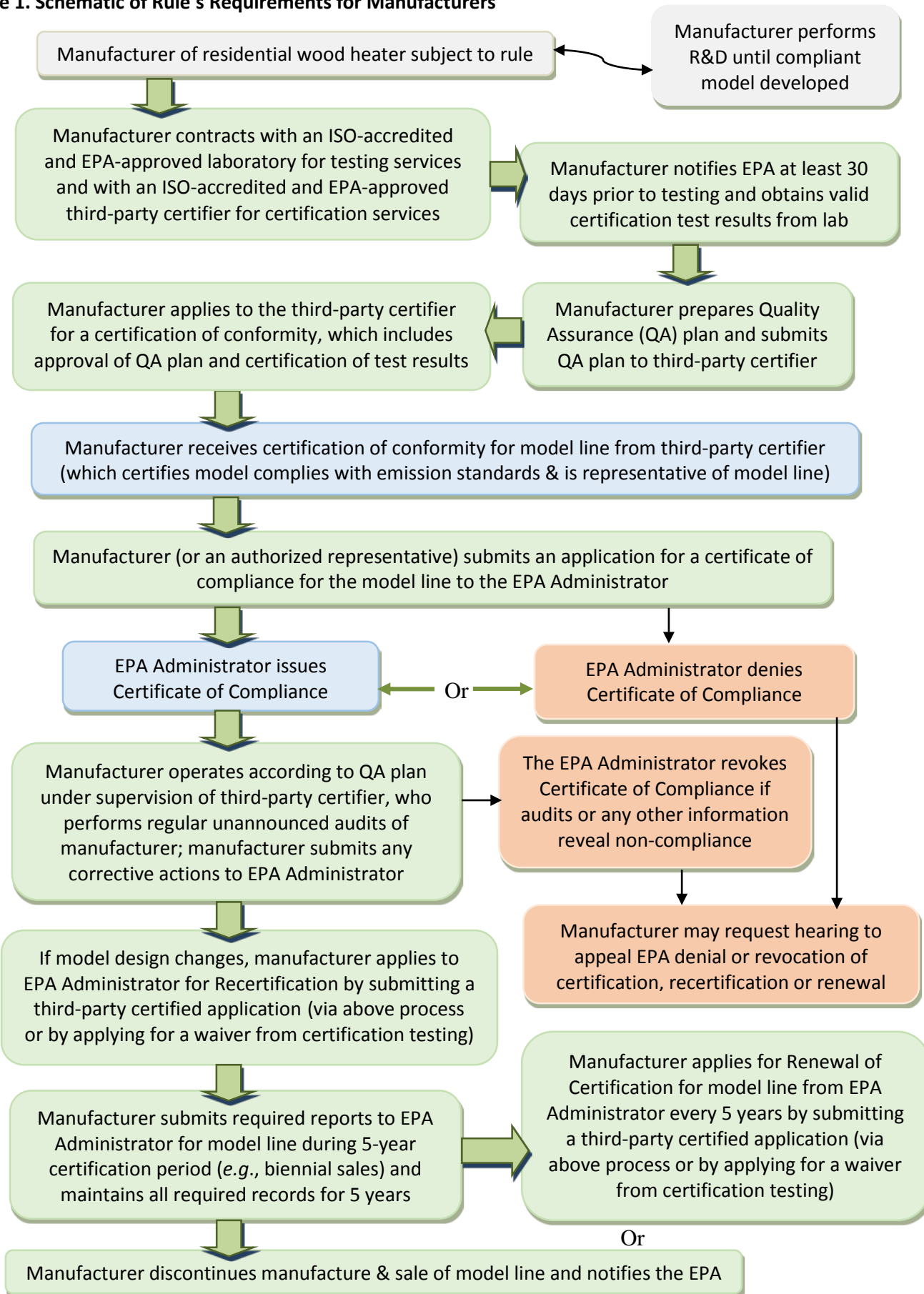
The Presiding Officer will make an initial decision, including written findings and conclusions, within 60 days of the manufacturer's request for a hearing. This initial decision will become the decision of the EPA Administrator unless there is an appeal to the Administrator (by the manufacturer) or motion for review (by the EPA Administrator). In the event of an appeal, the EPA Administrator must render a decision within 30 days of the filing of the appeal.

4.6 Overall Schematic of Rule's Requirements for Manufacturers

Figure 1 is a schematic that depicts the overall process manufacturers must take to comply with the rule (beyond the first year, once the third-party certification program is fully implemented). This process includes:

- contracting with an ISO-accredited and EPA-approved test laboratory and third-party certifier;
- notifying EPA of certification testing;
- obtaining valid certification test results from the testing lab;
- preparing a QA plan and submitting this plan to the third-party certifier for approval;
- applying to the third-party certifier for a certification of conformity;
- submitting an application for a certificate of compliance for the model line to the EPA Administrator;
- operating according to QA plan, under the supervisory audits of the third-party certifier;
- applying to the EPA Administrator for recertification of model line, if needed;
- ongoing reporting and recordkeeping requirements;
- the options available upon expiration of certification (renewal, recertification and discontinuation of model line); and
- the options available in response to potential denial or revocations of certification by the EPA.

Figure 1. Schematic of Rule's Requirements for Manufacturers



5.0 What does the Rule Require of Testing Laboratories?

This section discusses the rule’s requirements for residential wood heater testing laboratories (“labs”). The five basic components of the rule’s requirements affecting testing labs include: (1) ISO-IEC accreditation and EPA approval; (2) certification testing of a representative model according to the test methods and procedures specified in the rule; (3) biennial proficiency testing; (4) compliance audit testing, if selected by the EPA; and (5) reporting and recordkeeping. This section also discusses a testing lab’s options in response to a denial or revocation of approval by EPA. Figure 2 in Section 5.7 provides an overall schematic of the typical steps required of testing labs to comply with the rule.

5.1 ISO-IEC Accreditation and EPA Approval

ISO-IEC accreditation and EPA application process: A lab must apply to the EPA Administrator for approval to test under this rule by submitting documentation that the lab is accredited by a nationally recognized accrediting entity under ISO-IEC Standard 17025 to perform testing using the test methods specified in the rule. (The accrediting entity must be a full member signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement.) As noted in §60.535(a) and §60.5477(a), **labs accredited by EPA prior to May 15, 2015 have until May 15, 2018 (3 years) to submit documentation that they have ISO accreditation under ISO-IEC Standard 17025. ISO accreditation is required for all other labs performing testing on wood stoves, pellet stoves, single burn rate stoves and forced-air furnaces beginning on November 16, 2015. However, ISO accreditation is required for labs performing hydronic heater testing beginning on May 15, 2015.** Table 5-1 lists the application requirements to become an EPA-approved testing lab under this rule.

Table 5-1.

EPA Application Requirements for Test Laboratories <i>(These requirements are in §60.535(a) for subpart AAA and §60.5477(a) for subpart QQQQ)</i>
(1) Documentation showing accreditation under ISO-IEC Standard 17025
(2) Agree to participate biennially in an independently operated proficiency testing program with no direct ties to the participating laboratories
(3) Agree to allow the Administrator, regulatory agencies and third-party certifiers access to observe certification testing
(4) Agree to comply with calibration, reporting and recordkeeping requirements that affect approved testing laboratories
(5) Agree to perform a compliance audit test (at the manufacturer's expense at the testing cost normally charged to such manufacturer) if the laboratory is selected by the Administrator to conduct the compliance audit test of the manufacturer's model line
(6) Have no conflict of interest and receive no financial benefit related to the outcome of testing
(7) Agree to not perform initial certification tests on any models manufactured by a manufacturer for which the laboratory has conducted research and development design services within the last 5 years
(8) Agree to seal any wood heater on which it performed certification tests, immediately upon completion or suspension of certification testing, by using a laboratory-specific seal
(9) Agree to immediately notify the Administrator of any suspended tests (including the reason(s) why and the projected retest date) and submit the operation and test data obtained for the suspended tests

If the EPA approves the lab, the EPA Administrator will issue the test lab a certificate of approval for testing under this rule. If the EPA does not approve the lab, the EPA Administrator will give written notice to the lab explaining the basis for the denial. See Section 5.6 of this guide for the testing lab's options in response to a denial of approval by the EPA.

Period of test laboratory approval: Unless revoked sooner, a **certificate of approval for testing** under the rule is **valid for 5 years** from the date of issuance. However, as noted above, labs that are already accredited by the EPA as of May 15, 2015 may continue to be EPA accredited and deemed EPA approved for testing until May 15, 2018. After 2018, the EPA accreditation and approval ends unless the lab has obtained ISO accreditation and EPA approval as detailed above and under §60.535(a) for subpart AAA and §60.5477(a) for subpart QQQQ.

5.2 Certification Testing according to Methods Specified in the Rule

Specified methods: Certification testing by approved labs is essentially a two-step process involving rule-specified methods. First, the wood heater model must be fueled and operated according to the laboratory methods specified in the rule. Second, while burning/operating, the PM and CO emissions must be sampled and analyzed and the efficiency determined according to the laboratory methods specified in the rule. **Tables 5-2, 5-3 and 5-4** present the **(1) Fueling & Operating Methods** and **(2) the Sampling & Analytical Methods** for wood stoves under subpart AAA, hydronic heaters under subpart QQQQ and forced-air furnaces under subpart QQQQ, respectively.

Protocol during testing: As noted in §60.534(h) and §60.5476(i), the approved test lab must allow the manufacturer, the manufacturer's third-party certifier, the EPA and delegated state regulatory agencies to observe certification testing. However, **manufacturers must not involve themselves in the conduct of the test after the pretest burn has begun.** Communications between the manufacturer and the lab or third-party certifier personnel regarding operation of the wood heater must be limited to written communications transmitted prior to the first pretest burn of the certification test series. During certification tests, the manufacturer may communicate with lab personnel only in writing and only to notify them that the manufacturer has observed a deviation from proper test procedures. All communications must be included in the test documentation required to be submitted and – except to the extent that they address details of the certification tests that would not be relevant to owners or regulators – all documented communications must be consistent with instructions provided in the required owner's manual.

Test documentation and QA: As part of the application for a certificate of compliance, the manufacturer must state that the approved lab (and third-party certifier) are allowed to submit information to the EPA on behalf of the manufacturer (*e.g.*, test documentation), including any information claimed to be CBI. As noted in §60.534(a) and §60.5476(a), the manufacturer or manufacturer's authorized representative (*e.g.*, test lab or third-party certifier) must submit a summary and the full test reports with all supporting information. This includes a detailed discussion of all anomalies, whether all burn rate categories were properly achieved, any data not used in the calculations and, for any test runs not completed, the data that were collected and the reason that the test run was not completed. The burn rate for the low burn rate category must be no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer. Note that as part of the certificate of conformity, the third-party certifier will certify that the tests were conducted by the approved lab according to the guidelines specified in the rule, that the test report (prepared by the lab) is complete and accurate, and that the instrumentation used by the approved lab for the certification test was properly calibrated.

Table 5-2. Certification Testing for Determining Wood Stove Compliance (under AAA)

<i>Affected Heaters</i>	<i>Emission Standards</i>	<i>Certification Test Methods¹</i>
Adjustable burn rate, single burn rate and pellet stoves manufactured on or after May 15, 2015 or sold at retail, wholesale, distributed or imported for use in the U.S. on or after December 31, 2015.	2015 Standard PM Limit of 4.5 g/hr (0.010 lb/hr) using crib wood, cord wood or pellets	<u>(1) Fueling & Operating Methods</u> Conduct testing using EPA Method 28R ² or ASTM E2779-10 ³ , or an alternative test method approved by the Administrator (<i>e.g.</i> , ASTM E2780-10) ⁴ <u>(2) Sampling & Analytical Methods</u> PM concentrations must be measured by the test method specified in ASTM E2515-11. ⁵ Thermal efficiency, CO and heat output must be measured using CSA Method B415.1-10. ⁶
Adjustable burn rate, single burn rate and pellet stoves manufactured or sold at retail, wholesale, distributed or imported for use in the U.S. on or after May 15, 2020	2020 Standard PM Limit of 2.0 g/hr (0.0044 lb/hr) using crib wood or pellets 2020 Alternative Cord Wood Compliance Option PM Limit of 2.5 g/hr (0.0055 lb/hr)	<u>(1) Fueling & Operating Methods</u> Conduct testing using EPA Method 28R ² , or ASTM E2779-10 ³ , or an alternative test method approved by the Administrator <i>Cord Wood Option:</i> Conduct testing with cord wood using a cord wood test method approved by the Administrator (<i>e.g.</i> , ASTM E2780-10) ⁴ <u>(2) Sampling & Analytical Methods</u> PM concentrations must be measured by the test method specified in ASTM E2515-11. ⁵ Thermal efficiency, CO and heat output must be measured using CSA Method B415.1-10. ⁶

¹ Prior to testing, the heater must be operated for a minimum of 50 hours using a medium burn rate, at manufacturer’s facility or at test lab. Douglas fir may be used in ASTM E2779-10, ASTM E2780-10 and CSA B415.1-10 (and Method 28R).

² Method 28R covers the fueling and operating protocol of wood stoves, including pellet stoves, and requires using ASTM E2515-11 to measure emissions (not Method 5H). Method 28R incorporates the provisions of ASTM E2780-10, with burn rate and startup modifications based on Method 28. For single-burn rate stoves, Method 28R includes the burn rate protocol detailed in Appendix X1 of ASTM E2780-10. ASTM E871–82 may be used as an alternative to the procedures in Method 5H or Method 28 for determining total weight basis moisture in the analysis sample of particulate wood fuel.

³ASTM E2779-10 covers the fueling and operating protocol for determining PM emissions from pellet stoves.

⁴For the 2015 standard, stoves tested with cord wood must meet the same PM emission limit as if tested with crib wood. For the 2020 standard, stoves tested with cord wood have an alternative PM emission limit (shown above). ASTM E2780-10 (cord wood annex) is an example of an alternative cord wood-based method, which is used in conjunction with ASTM E2515-11. When using ASTM 2780-10, the four burn rate categories and weighting factors in Method 28R must be used.

⁵ ASTM E2515-11 is used to measure PM emissions from adjustable burn rate, single burn rate and pellet stoves. For all tests conducted using ASTM E2515-11, the manufacturer and approved test lab must also measure the first hour of PM emissions for each test run, using a separate filter in one of the two parallel trains, report the test results for the first hour separately and also include these test results in the total PM emissions per run. Four-inch filters and Teflon membrane filters or Teflon-coated glass fiber filters may be used in ASTM E2515–11.

⁶ Canadian Standards Association (CSA) Method B415.1-10 specifies requirements for performance testing of solid-fuel-burning heating appliances, including heat outputs, appliance efficiencies, and emission levels and composition (*e.g.*, CO).

Table 5-3. Certification Testing for Determining Hydronic Heater Compliance (under QQQQ)

<i>Affected Heaters</i>	<i>Emission Standards</i>	<i>Certification Test Methods</i> ¹
Hydronic heaters manufactured on or after May 15, 2015 or sold at retail, wholesale, distributed, or imported for use in the U.S. on or after December 31, 2015	2015 Standard PM Limit of 0.32 lb/mmBtu (0.137 g/MJ) heat output (weighted average) and a max PM emission cap of 18.0 g/hr (0.041 lb/hr) per individual burn rate , using crib wood, cord wood or pellets	<u>(1) Fueling & Operating Methods</u> Conduct testing using Method 28 WHH ² , Method 28 WHH PTS ^{3,4} , ASTM E2618-13 ^{3,5} , EN 303-5 (only for units sold with thermal storage) ⁶ , or an alternative test method approved by the Administrator. ⁷ <u>(2) Sampling & Analytical Methods</u> PM concentrations must be measured by the test method specified in ASTM E2515-11. ⁸ Thermal efficiency and CO must be measured using CSA Method B415.1-10. ⁹
Hydronic heaters manufactured or sold at retail, wholesale, distributed or imported for use in the U.S. on or after May 15, 2020	2020 Standard PM Limit of 0.10 lb/mmBtu (0.026 g/MJ) heat output per individual burn rate , using crib wood or pellets 2020 Alternative Cord Wood Compliance Option PM Limit of 0.15 lb/mmBtu (0.026 g/MJ) heat output per individual burn rate	<u>(1) Fueling & Operating Methods</u> Conduct testing using Method 28 WHH ² , Method 28 WHH PTS ^{3,4} , ASTM E2618-13 ^{3,5} , or an alternative test method approved by the Administrator. Cord Wood Option: Conduct testing with cord wood using Method 28 WHH ² , Method 28 WHH PTS ^{3,4} , ASTM E2618-13 ^{3,5} , or an alternative cord wood test method approved by the Administrator. <u>(2) Sampling & Analytical Methods</u> PM concentrations must be measured by the test method specified in ASTM E2515-11. ⁸ Thermal efficiency and CO must be measured using CSA Method B415.1-10. ⁹

¹ Douglas fir may be used in ASTM E2618-13 and CSA B415.1-10.

² Method 28 WHH applies to hydronic heaters without thermal storage.

³ A unit with full or partial heat storage capacity must be sold & installed with no less heat storage capacity than tested.

⁴ Method 28 WHH PTS applies to hydronic heaters with heat (thermal) storage external to the appliance.

⁵ ASTM E2618-13 is a cord wood-based method, although it may be used with crib wood; the burn rate categories of Method 28 WHH must be used. ASTM E2618-13 must be used for continuously fed models and may be used for full and partial thermal storage models. For full thermal storage certification tests, use the large scale unless a pre-test variance is requested, contingent upon measuring flue gas temperature, oxygen and CO, and comparing estimated efficiency to delivered efficiency.

⁶ EN 303-5 is a European-based method for hydronic heaters that may be used to show compliance to the 2015 standard (not the 2020 standard), only for models sold with thermal storage, and organic compounds must be included in the PM.

⁷ For the 2015 standard, hydronic heaters tested with cord or crib wood must meet the same PM emission limit.

⁸ ASTM E2515-11 must be used for the determination of PM emissions (except for the 2015 certification tests using EN 303-5). For all tests conducted using ASTM E2515-11, the first hour of PM emissions must be measured for each test run, using a separate filter in one of the two parallel trains, report the test results for the first hour separately and also include these test results in the total PM emissions per run. Four-inch filters and Teflon membrane filters or Teflon-coated glass fiber filters may be used in ASTM E2515-11. Method 5H is not allowed for certification testing.

⁹ Canadian Standards Association (CSA) Method B415.1-10 sections 13.7-13.10 must be used to measure thermal efficiency and CO emissions, except that the burn rates specified in Method 28 WHH must be used.

Table 5-4. Certification Testing for Determining Forced-Air Furnace Compliance (under QQQQ)

<i>Affected Heaters</i>	<i>Emission Standards</i>	<i>Certification Test Methods</i> ¹
<p>Small forced-air furnaces manufactured or sold at retail, wholesale, distributed or imported for use in the U.S. on or after May 16, 2016</p> <p>Large forced-air furnaces manufactured or sold at retail, wholesale, distributed or imported for use in the U.S. on or after May 15, 2017</p>	<p>2016 (small furnaces) and 2017 (large furnaces) Standard PM Limit of 0.93 lb/mmBtu (0.40 g/MJ) heat output (weighted average), using cord wood or pellets</p>	<p><u>(1) Fueling & Operating Methods</u> Conduct testing with cord wood using CSA Method B415.1-10² or an alternative test method approved by the Administrator</p> <p><u>(2) Sampling & Analytical Methods</u> PM concentrations must be measured by the test method specified in ASTM E2515-11.³ Thermal efficiency and CO must be measured using CSA Method B415.1-10.²</p>
<p>All forced-air furnaces manufactured or sold at retail, wholesale, distributed or imported for use in the U.S. on or after May 15, 2020</p>	<p>2020 Standard PM Limit of 0.15 lb/mmBtu (0.026 g/MJ) heat output per individual burn rate, using cord wood or pellets</p>	<p><u>(1) Fueling & Operating Methods</u> Conduct testing with cord wood using CSA Method B415.1-10⁴ or an alternative test method approved by the Administrator</p> <p><u>(2) Sampling & Analytical Methods</u> PM concentrations must be measured by the test method specified in ASTM E2515-11.³ Thermal efficiency and CO must be measured using CSA Method B415.1-10.⁴</p>

¹ Douglas fir may be used in CSA B415.1-10.

² Canadian Standards Association (CSA) Method B415.1-10 must be used for fueling and operating protocol and to measure the heat output (mmBtu/hr), PM emission rate (lb/mmBtu heat output), CO emissions and thermal efficiency. Note that for the 2016/2017 standard, CSA B415.1-10 is used to define the burn rate categories.

³ ASTM E2515-11 must be used for the determination of PM emissions. For all tests conducted using ASTM E2515-11, the first hour of PM emissions must be measured for each test run, using a separate filter in one of the two parallel trains, and test results reported for the first hour separately and also included in the total PM emissions per run. Four-inch filters and Teflon membrane filters or Teflon-coated glass fiber filters may be used in ASTM E2515-11. Method 5H is not allowed for certification testing.

⁴ For the 2020 standard, CSA Method B415.1 must use the burn rate categories in Method 28 WHH; and the PM, efficiency and CO emission results must be reported separately per burn rate category.

5.3 Biennial Proficiency Testing

To ensure a lab's continuing expertise in testing, as part of the testing lab's application to EPA for approval to test under the rule, the lab must agree to participate biennially in an independently operated proficiency testing program. As noted in §60.535(a)(2) and §60.5477(a)(2), the testing program must have no direct ties to the participating laboratories. Failing to participate in such a proficiency testing program is cause for the EPA to revoke a lab's approval to test under this rule, as noted in §60.535(b)(1) and §60.5477(b)(1). Furthermore, as noted in §60.537(b) and §60.5479(b), each approved test lab must submit all proficiency results to the EPA Administrator.

5.4 EPA Compliance Audit Testing

The EPA Administrator may select a test lab to perform compliance audit testing on selected wood heaters or model line(s). As part of the application for EPA approval, the test lab agrees to perform compliance audit testing at the manufacturer's expense at the testing cost normally charged to the manufacturer.

The test must be conducted using the same test method used to obtain certification for the wood heater/model line in question. (If more than one PM sampling test method was used for certification testing, the EPA Administrator may direct the manufacturer and test lab as to which of these methods to use for the purpose of audit testing.) If the audited wood heater exceeds the applicable emission limit, the test lab must provide a preliminary audit test report to the EPA Administrator within 14 days of the completion of testing. Within 30 days of the completion of audit testing and regardless of whether the audited wood heater meets or exceeds the applicable emission limit, the test lab must provide the EPA Administrator and the manufacturer all documentation pertaining to the test, including the complete test report and raw data sheets, laboratory technician notes, and test results for all test runs.

Note that the manufacturer may request that up to four additional wood heaters from the same model line be tested (at the manufacturer's expense) at the test lab that performed the compliance audit emissions testing for the EPA Administrator. This manufacturer's option is discussed in more detail in Section 4.5 of this guide.

5.5 Reporting and Recordkeeping

Reporting requirements: Each approved test lab is required to submit the following documentation directly to the EPA Administrator:

- ISO accreditation credentials;
- all biennial proficiency test results;
- the results from any suspended certification tests; and
- any compliance audit test results.

Regarding the EPA compliance audit test results, as noted in Section 5.4, the test lab must provide a preliminary test report to the EPA Administrator within 14 days of the completion of testing, if a wood heater exceeds the applicable emission limits. Within 30 days of the completion of testing, the test lab must provide the EPA Administrator and the manufacturer all documentation pertaining to the test, including the complete test report and raw data sheets, laboratory technician notes, and test results for all test runs.

Regarding certification test results, the approved test lab must prepare for the manufacturer all documentation pertaining to a valid certification test. (See Section 4.1 of this guide regarding what constitutes a valid certification test.) Submitting the test documentation to the EPA is the responsibility of the manufacturer, but the test lab (or the third-party certifier) may do so on the manufacturer's behalf, as authorized. Valid certification test documentation includes the following:

- complete test report;
- raw data sheets, laboratory technician notes, calculations and test results for all test runs;
- all items specified in the applicable test methods;
- discussion of each test run and its appropriateness and validity,
- detailed discussion of all anomalies;
- whether all burn rate categories were achieved;
- any data not used in the calculations and, for any test runs not completed, the data collected during the test run and the reason(s) that the test run was not completed;
- indication that the burn rate for the low burn rate category is no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer;
- a summary table that clearly presents the individual and overall emission rates, efficiencies and heat outputs.

Recordkeeping requirements: As noted in §60.537(b) and §60.5479(b), each approved test lab must **maintain records for 5 years** consisting of:

- all documentation pertaining to **each certification test**, including the full test report and raw data sheets, technician notes, calculations, and the test results for all test runs;
- all documentation pertaining to **any audit test(s)**, including the full test report and raw data sheets, technician notes, calculations, and the test results for all test runs; and
- all **proficiency test records**.

5.6 Options for Responding to EPA Denial or Revocation of Approval

Criteria for denial of an application for test laboratory approval: The EPA may deny a lab's application for approval or renewal to test under the rule if EPA determines that the lab has not satisfied the application requirements (listed in Section 5.1 of this guide and in §60.535(a) for subpart AAA and §60.5477(a) for subpart QQQQ). If the EPA does not approve the lab's application, the EPA Administrator will provide notice of the denial in writing and this notice will provide the basis for EPA's denial. If denied, the lab may request a hearing regarding EPA's decision under §60.539 and §60.5481, as discussed below.

Criteria for revocation of test laboratory approval: Once approved, the EPA Administrator may revoke lab approval if it is determined that any of the following are true:

- The lab is no longer accredited by the accreditation body;
- The lab does not follow required procedures or practices;
- The lab has falsified data or otherwise misrepresented emission data;
- The lab has failed to participate in a proficiency testing program, in accordance with its commitment in its application for approval; or
- The lab has failed to seal a wood heater in accordance with its application for approval.

EPA revocation of approval will not take effect until the lab has been given written notice by the EPA Administrator setting forth the basis for the proposed revocation and an opportunity for a hearing (under §60.539 for subpart AAA and §60.5481 for subpart QQQQ). However, if revocation is ultimately upheld, all tests conducted by the laboratory after written notice was given will, at the discretion of the EPA Administrator, be declared invalid.

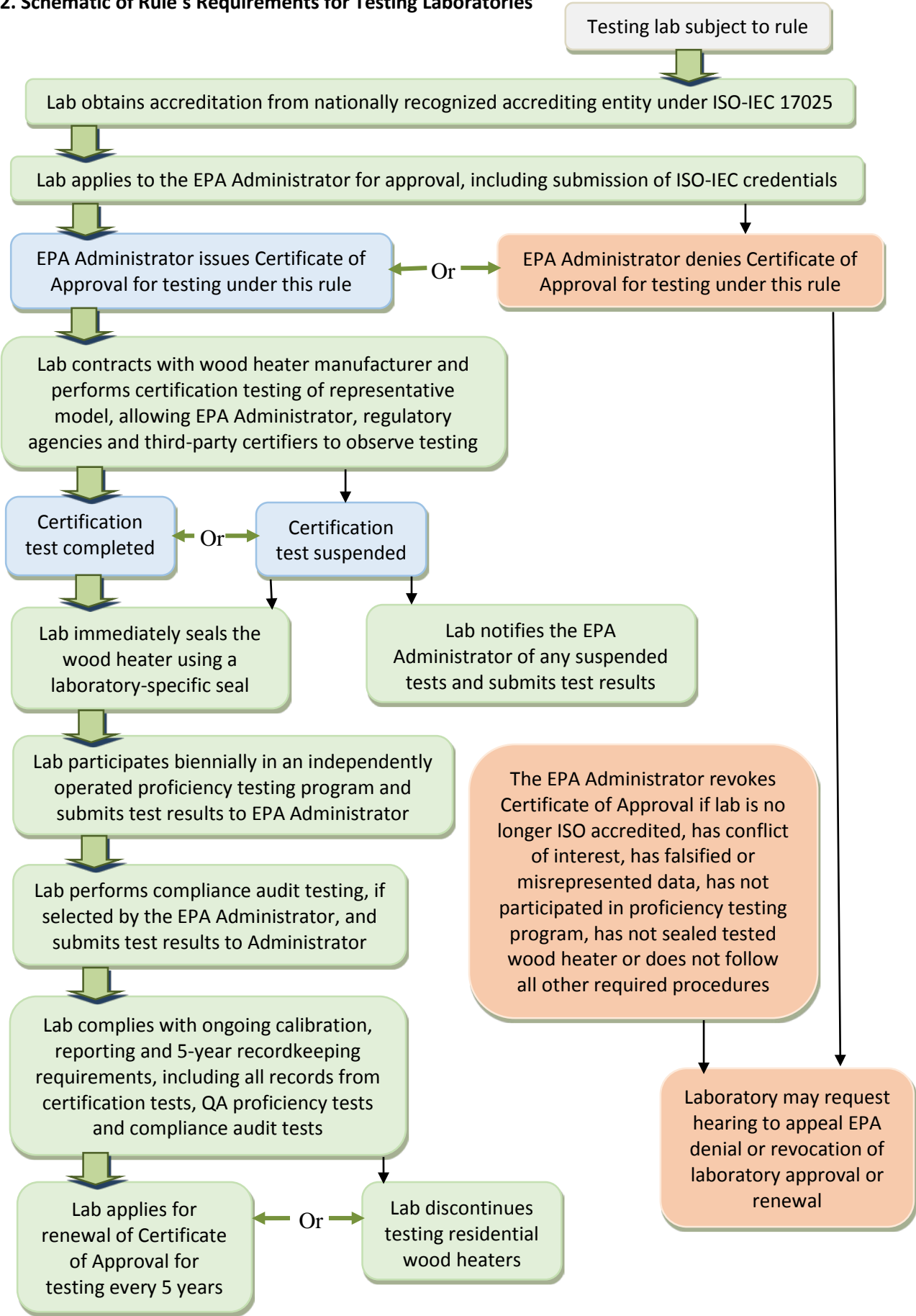
Laboratory's options for hearings and appeals: Within 30 days following receipt of the required notification from the EPA Administrator in the event of denial or revocation (as discussed above), the lab may request a hearing under §60.539 and §60.5481. This hearing request must be in writing, must be signed by an authorized representative of the lab and must include a specific, detailed statement explaining the lab's objection to the EPA's denial or revocation (or proposed denial or revocation). Generally, an Administrative Law Judge will serve as Presiding Officer in a hearing and the hearing will commence as soon as practicable at a time and place set by the Presiding Officer. The general procedural rules of these hearings are discussed in §60.539 and §60.5481. The Presiding Officer will make an initial decision, including written findings and conclusions, within 60 days of the lab's request for a hearing. This initial decision will become the decision of the EPA Administrator unless there is an appeal to the Administrator (by the lab) or motion for review (by the EPA Administrator). In the event of an appeal, the EPA Administrator must render a decision within 30 days of the filing of the appeal.

5.7 Overall Schematic of Rule's Requirements for Testing Labs

Figure 2 is a schematic that depicts the overall process testing labs must take to comply with the rule (beyond the initial transitional years, once all labs must be ISO-IEC accredited and the third-party certification program is fully implemented). This process includes:

- obtaining accreditation from a nationally recognized accrediting entity under ISO-IEC 17025;
- applying for EPA approval to test under the rule;
- contracting with a wood heater manufacturer and performing certification testing according to the specified test methods in the rule;
- biennial participation in an independently operated proficiency testing program;
- compliance audit testing as directed by the EPA;
- ongoing reporting and recordkeeping requirements;
- the options available upon expiration of approval (renewal, discontinuation); and
- the options available in response to potential denial or revocation of approval by the EPA.

Figure 2. Schematic of Rule's Requirements for Testing Laboratories



6.0 What does the Rule Require of Third-Party Certifiers?

This section discusses the rule’s requirements for residential wood heater third-party certifiers. The four basic components of the rule’s requirements affecting third-party certifiers include: (1) ISO-IEC accreditation and EPA approval; (2) third-party certification activities required for certification of conformity; (3) auditing of manufacturer’s QA plan; and (4) reporting and recordkeeping. This section also includes a subsection discussing a third-party certifier’s options in response to denial or revocation of approval by EPA. Figure 3 in Section 6.6 provides an overall schematic of the typical steps required of third-party certifiers to comply with the rule.

6.1 ISO-IEC Accreditation and EPA Approval

ISO accreditation and EPA application process: In order to perform certification activities under this rule, as noted in §60.535(d) and §60.5477(d), **a potential third-party certifier must apply to the EPA Administrator for approval by submitting credentials demonstrating that it has been accredited by a nationally recognized accrediting entity to perform certifications and inspections under ISO-IEC Standards 17025, 17065 and 17020.** Table 6-1 lists the EPA application requirements to become an EPA-approved third-party certifier for certification activities under this rule.

Table 6-1.

EPA Application Requirements for Third-Party Certifiers <i>(These requirements are in §60.535(d) for subpart AAA and §60.5477(d) for subpart QQQQ)</i>
(1) Documentation demonstrating accreditation under ISO-IEC Standards 17025, 17065 and 17020
(2) Agree to offer to contract with residential wood heater manufacturers to perform third-party certification activities according to the requirements set forth in the rule
(3) Agree to periodically (at least annually) conduct unannounced audits to ensure that the manufacturer's QA plan is being implemented
(4) Agree to comply with reporting and recordkeeping requirements that affect approved residential wood heater third-party certifiers
(5) Have no conflict of interest and receive no financial benefit from the outcome of certification testing
(6) Agree to make available to the EPA Administrator supporting documentation for each residential wood heater certification and audit
(7) Agree to not perform initial certification reviews on any models manufactured by a manufacturer for which the third-party certifier has conducted research and development design services within the last 5 years

If the EPA approves the third-party certifier, the EPA Administrator will issue a certificate of approval for certification activities under this rule. If the EPA does not approve the third-party certifier, the EPA Administrator will give written notice to the third-party certifier explaining the basis for the denial. See Section 6.5 of this guide for the third-party certifier’s options in response to an EPA denial of approval.

Period of third-party certifier approval: Unless revoked sooner, a certificate of approval for third-party certification services under the rule is **valid for 5 years** from the date of issuance.

6.2 Third-party Certification Services for Manufacturer

Certification of Conformity required for manufacturer's Certificate of Compliance from EPA: As part of the application for a certificate of compliance, EPA requires a valid certification of conformity from the manufacturer's third-party certifier. Therefore, after testing by an approved lab is complete, the manufacturer must apply to its contracted third-party certifier for a certification of conformity. **The third-party certifier will perform a certification of conformity to verify that the entire model line, represented by the tested model, meets the rule's applicable emission standards.** The manufacturer must submit to the third-party certifier all compliance application materials (*i.e.*, the list of 15 items including the certification test report required in §60.533(b) and §60.5475(b) and shown in Section 4.1 of this guide) as well as the manufacturer's QA plan. The manufacturer's QA plan must meet the requirements of §60.533(m) and §60.5475(m) to ensure that units within a model line will be similar in all material respects that would affect emissions to the wood heater submitted for certification testing.

The third-party certifier may certify conformity if the emission tests have been conducted per the appropriate guidelines, including:

- the test report is complete and accurate;
- the instrumentation used for the test was properly calibrated;
- the test report shows that the representative model meets the applicable emission limits; and
- the manufacturer's QA plan is adequate to ensure that units within the model line will be similar, in all material respects that would affect emissions, to the tested/certified model and that the units in the model line will meet all (other) applicable requirements.

It should be noted that, as part of the manufacturer's application to the EPA for a certificate of compliance for a model line, the manufacturer must state not only that the manufacturing company/entity has entered into a contract with the third-party certifier but also that the third-party certifier is allowed to submit information on behalf of the manufacturer, including CBI.

Compliance Renewals: As noted in §60.533(i) and §60.5475(i), the manufacturer must renew a model line's certificate of compliance or recertify the model line every 5 years, or the manufacturer may choose to no longer manufacture or sell that model line after the expiration date. If a manufacturer applies to the EPA Administrator for a potential renewal of its certificate of compliance, **the renewal application must include a copy of the review of the draft application and approval by the third-party certifier.** The application may be a complete application, containing all items required in an initial application for a certificate of compliance. Alternatively, the renewal application may be a request for a potential waiver from certification testing, which must include an affirmation in writing that the heaters in the model line continue to be similar in all material respects that would affect emissions to the representative model submitted for testing on which the original certificate of compliance was based. Even if the application is merely a request for a testing waiver, the manufacturer's contracted third-party certifier must review and approve the application prior to its submission to EPA.

Compliance Recertifications: As noted in §60.533(k) and §60.5475(k), the manufacturer must apply to the EPA Administrator for recertification of a model line whenever any change is made in the design that affects, or is presumed to affect, the PM emission rate for that model line. Similar to the process noted above for renewals, the application may be a complete application, containing all the items required in an initial application for a certificate of compliance. Alternately, the recertification application may be a request for a waiver from certification testing, in which case it must include an

affirmation in writing that the change (triggering the recertification application) will not cause the heaters in the model line to exceed applicable emission limits. **The application for recertification must be reviewed and approved by the contracted third-party certifier and a copy of the review and approval must be included in the application.**

6.3 Approval and Auditing of Manufacturer's Quality Assurance Plan

On or after May 16, 2016, for each certified model line, the manufacturer must conduct a QA program that satisfies the requirements of the rule specified in §60.533(m) and §60.5475(m). The manufacturer must prepare and operate according to a QA plan for each certified model line that includes specific inspection and testing requirements for ensuring that all units within a model line are similar in all material respects that would affect emissions to the wood heater submitted for certification testing and meet the emissions standards. **The third-party certifier has two overarching requirements with respect to the manufacturer's QA plan:**

- (1) **The third-party certifier must review and approve the manufacturer's QA plan** as part of the certification of conformity process, described in Section 6.2 of this guide and in §60.533(f) and §60.5475(f); and
- (2) **The third-party certifier must conduct regular (at least annual) unannounced audits** under ISO-IEC Standard 17065 to ensure that the manufacturer's QA plan is being implemented

Under the third-party certifier-based application process, a manufacturer must contract with a third-party certifier for certification services. In addition to the review, approval and auditing of the manufacturer's QA plan, **the third-party certifier's contract with the manufacturer must also include a report for each audit under ISO-IEC Standard 17065 that fully documents the results of the audit.** The contract must include authorization and requirement for the third-party certifier to submit all such reports to the Administrator and the manufacturer within 30 days of the audit. The third-party certifier's audit report must identify deviations from the manufacturer's QA plan and specify the corrective actions that need to be taken to address each identified deficiency.

6.4 Reporting and Recordkeeping

Reporting requirements: As noted in §60.537(b) and §60.5479(b), each third-party certifier is required to submit the following documentation directly to the EPA Administrator:

- ISO accreditation credentials;
- each certification test (submitted on behalf of the manufacturer); and
- each QA program/plan inspection report resulting from the third-party certifier's auditing of the manufacturer's QA plan.

Regarding the QA program/plan inspection report, as noted in Section 6.3 of this guide, the third party-certifier must submit all such reports to the EPA Administrator and the manufacturer within 30 days of the audit. The audit report must identify deviations from the manufacturer's QA plan (if there are any) and specify the corrective actions that need to be taken to address each identified deficiency.

Recordkeeping requirements: As noted in §60.537(b) and §60.5479(b), each approved third-party certifier must **maintain records for 5 years** consisting of:

- all documentation pertaining to each certification test; and
- all documentation pertaining to each QA program/plan inspection, including the full test report and raw data sheets, technician notes, calculations, and the test results for all test runs.

6.5 Options for Responding to EPA Denial or Revocation of Approval

Criteria for denial of an application for third-party certifier approval: The EPA may deny a third-party certifier's application for approval or renewal to perform certification activities under the rule if EPA determines that the third-party certifier has not satisfied the application requirements (listed in Section 6.1 of this guide and in §60.535(d) for subpart AAA and §60.5477(d) for subpart QQQQ). If the EPA does not approve the third party certifier's application, the EPA Administrator will provide notice of the denial in writing and this notice will provide the basis for EPA's denial. If denied, the third-party certifier may request a hearing regarding EPA's decision, as discussed below.

Criteria for revocation of third-party certifier approval: Once approved, the EPA Administrator may revoke the EPA third-party certifier approval if it is determined that any of the following are true:

- The third-party certifier is no longer accredited by the accreditation body;
- The third-party certifier does not follow the required procedures or practices; or
- The third-party certifier has falsified certification data or otherwise misrepresented emission data.

EPA revocation of approval will not take effect until the certifier has been given written notice by the EPA Administrator setting forth the basis for the proposed determination and an opportunity for a hearing (under §60.539 for subpart AAA and §60.5481 for subpart QQQQ). However, if revocation is ultimately upheld, all certifications by the certifier after written notice was given will, at the discretion of the EPA Administrator, be declared invalid.

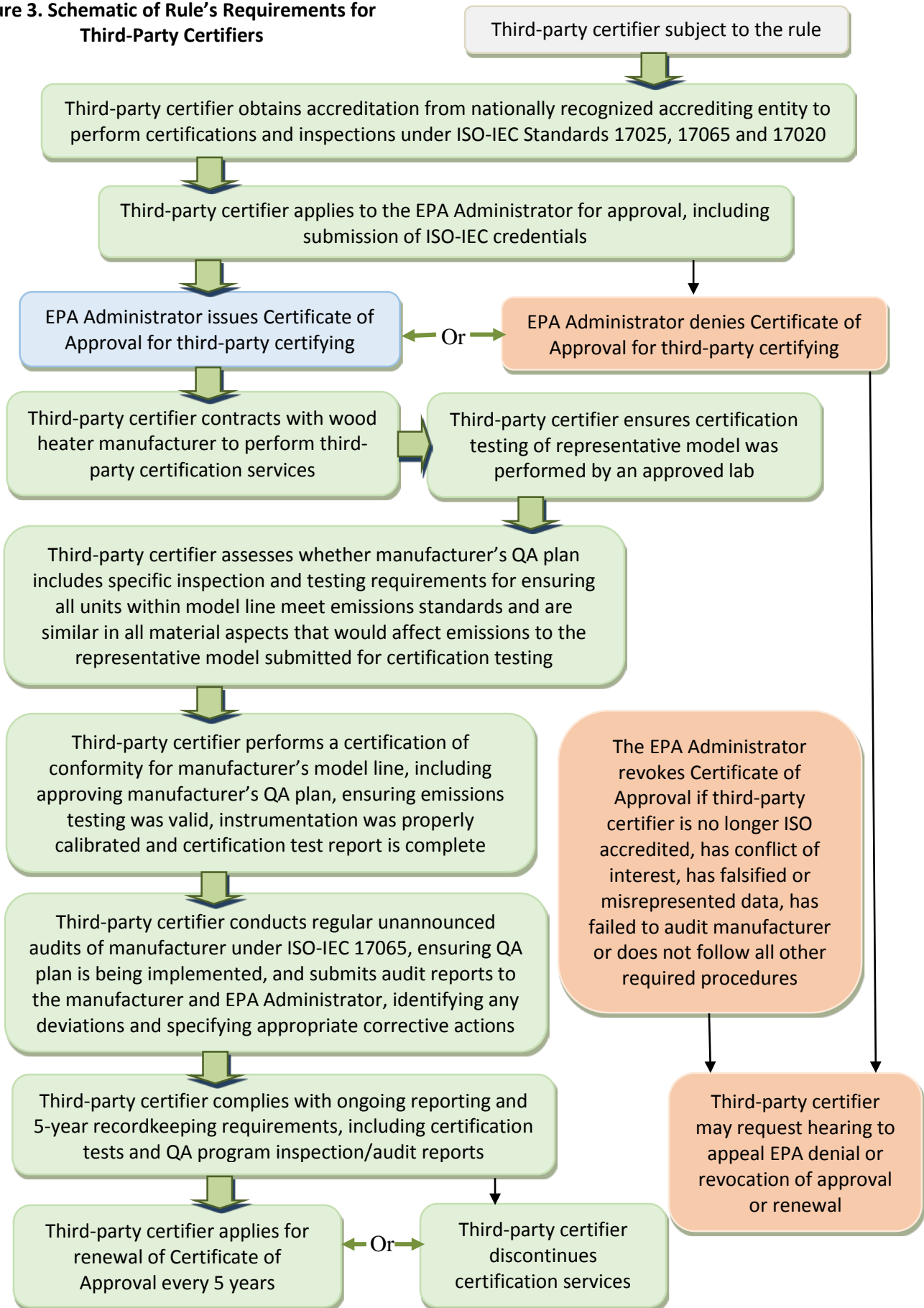
Third-party certifier's options for hearings and appeals: Within 30 days following receipt of the required notification from the EPA Administrator in the event of denial or revocation (as discussed above), the third-party certifier may request a hearing under §60.539 and §60.5481. This hearing request must be in writing, must be signed by an authorized representative of the certifier and must include a specific, detailed statement explaining the certifier's objection to the EPA's denial or revocation (or proposed denial or revocation). Generally, an Administrative Law Judge will serve as Presiding Officer in a hearing and the hearing will commence as soon as practicable at a time and place set by the Presiding Officer. The general procedural rules of these hearings are set out in §60.539 and §60.5481. The Presiding Officer will make an initial decision, including written findings and conclusions, within 60 days of the certifier's request for a hearing. This initial decision will become the decision of the EPA Administrator unless there is an appeal to the Administrator (by the third-party certifier) or motion for review (by the EPA Administrator). In the event of an appeal, the EPA Administrator must render a decision within 30 days of the filing of the appeal.

6.6 Overall Schematic of Rule's Requirements for Third-party certifiers

Figure 3 is a schematic which depicts the overall process third-party certifiers must take to comply with the rule. This process includes:

- obtaining accreditation from a nationally recognized accrediting entity under ISO-IEC Standards 17025, 17065 and 17020;
- applying for EPA approval to conduct third-party certification activities under the rule;
- contracting with a residential wood heater manufacturer to perform third-party certification services;
- ensuring certification testing of representative model was performed by an approved lab;
- assessing whether the manufacturer's QA plan meets the requirements of the rule;
- performing a certification of conformity, consisting of approval of the manufacturer's QA plan and ensuring the emissions testing were valid, including certifying proper calibration of instrumentation and verification of a complete test report;
- conducting regular (at least annual) unannounced audits of manufacturer, ensuring manufacturer's QA plan is being implemented, and submitting audit reports to the manufacturer and EPA Administrator which include identification of any deviations and specification of appropriate corrective actions;
- ongoing reporting and recordkeeping requirements;
- the options available upon expiration of approval (renewal, discontinuation); and
- the options available in response to potential denial or revocation of approval by the EPA.

Figure 3. Schematic of Rule's Requirements for Third-Party Certifiers



7.0 What does the Rule Require of Retailers, Wholesalers, Importers and Distributors?

This section discusses the rule's requirements for retailers, wholesalers, importers and distributors of residential wood heaters. (Note: if a manufacturer offers a residential wood heater for sale, the requirements of this Section 7.0 apply.) The three basic components of the rule's requirements affecting retailers, wholesalers, importers and distributors include: (1) compliance with the rule's effective dates; (2) compliance with the rule's labeling requirements; and (3) compliance with other prohibitions in the rule.

7.1 Compliance with Effective Dates and Sell-Through Periods

Retailers, wholesalers, importers and distributors of residential wood heaters subject to this rule must comply with the same effective dates faced by manufacturers, except where the rule provides for an extended period for "sell-through" of existing (non-compliant) inventory *manufactured prior to the effective date*. As noted in Section 3.4 of this guide, in order to minimize the cost of stranded inventory, the rule allows for an extended sell-through period of nearly 8 months – until December 31, 2015 – after the rule's effective date (May 15, 2015). This sell-through period applies to all wood stoves regulated under subpart AAA and for hydronic heaters regulated under subpart QQQQ.

The sell-through period does *not* apply to forced-air furnaces because the EPA deems the work practice and operational standard (of revising owner's manuals) to be feasible by May 15, 2015 and the emission limit compliance dates for small and large forced-air furnaces of May 16, 2016 and May 15, 2017, respectively, to also be achievable without incurring stranded inventory costs.

Likewise, there is no extended sell-through period associated with the 2020 compliance date of May 15, 2020. Five years is a sufficient period for manufacturers, retailers, wholesalers, importers and distributors to plan appropriately to avoid stranded inventory costs of non-compliant models.

Therefore, **listed in chronological order, no retailer, wholesaler, importer or distributor may sell or offer to sell in the U.S.:**

- a forced-air furnaces of any size after **May 15, 2015** that does not meet the work practice and operational standard of owner's manuals revised according to the rule's requirements;
- if manufactured on or after May 15, 2015, any adjustable burn rate stove (including catalytic, non-catalytic and hybrid stoves), single burn rate stove, pellet stove or hydronic heater after **May 15, 2015** that does not meet the applicable 2015 PM emission standards;
- if manufactured before May 15, 2015, any adjustable burn rate stove (including catalytic, non-catalytic and hybrid stoves), single burn rate stove, pellet stove or hydronic heater after **December 31, 2015** that does not meet the applicable 2015 PM emission standards;
- a small forced-air furnace (<65,000 BTU per hour) after **May 16, 2016** that does not meet the applicable 2016 PM emission standards;

- a large forced-air furnace ($\geq 65,000$ BTU per hour) after **May 15, 2017** that does not meet the applicable 2017 PM emission standards; or
- any residential wood heater (including all adjustable burn rate stoves, single burn rate stoves, pellet stoves, hydronic heaters and forced-air furnaces of any size) after **May 15, 2020** that does not meet the applicable 2020 PM emission standards.

It is important to emphasize that the **extended sell-through period** of existing (including non-compliant) inventory from May 15, 2015 to December 31, 2015 **applies only to residential wood heaters manufactured prior to May 15, 2015**. Any residential wood heaters manufactured on or after May 15, 2015 must comply with the rule's requirements, including the effective dates.

7.2 Compliance with Labeling Requirements

Retailers, wholesalers, importers and distributors must comply with the rule's labeling requirements. Specifically:

- No person is permitted to advertise for sale, offer for sale or sell a residential wood heater that does not have **affixed to it a permanent label** allowing sale and **meeting the rule's labeling specifications**, as shown in Tables 4-3 and 4-4 of this guide and in §60.536 for subpart AAA and in §60.5478 for subpart QQQQ, as applicable;
- No person is permitted to advertise for sale, offer for sale or sell a residential wood heater that meets the rule's labeling specifications unless the wood heater has been:
 - **certified to comply with the 2015 or 2020 PM emission standards**; and
 - the commercial owner provides the purchaser **with an owner's manual** that meets the rule's requirements.

These prohibitions are noted in the rule under §60.538 and §60.5480.

- No person is permitted to advertise for sale, offer for sale or sell a residential wood heater in the U.S. which is labeled for export only under §60.536(e) and §60.5478(d);
- No person is permitted to advertise for sale, offer for sale or sell a residential wood heater affixed with an optional temporary label/hangtag unless the optional hangtag meets the rule's requirements regarding temporary labels/hangtags noted in §60.536(f) and §60.5478(e).

7.3 Compliance with Other Prohibitions

In addition to complying with prohibitions related to the rule's effective dates, sell-through restrictions and labeling requirements, retailers, wholesalers, importers and distributors must comply with several other prohibitions in the rule. These other prohibitions, noted in §60.538 and §60.5480, are as follows:

- After a manufacturer receives a revocation of compliance notice from the EPA Administrator, no retailer, wholesaler, importer or distributor is permitted to sell any wood heater covered by the revoked certificate (other than to the manufacturer) unless the model line has been recertified in accordance with the rule's requirements;

- No retailer, wholesaler, importer or distributor is permitted to sell or offer for sale a wood heater that was originally equipped with a catalytic combustor if the catalytic element is deactivated or removed;
- No retailer, wholesaler, importer or distributor is permitted to sell or offer for sale a wood heater that has been physically altered to exceed the “k list” tolerance limits of its certificate of compliance (listed in §60.533(k) and §60.5475(k)); and
- No retailer, wholesaler, importer or distributor is permitted to alter, deface, or remove any permanent label required to be affixed according to the rule’s requirements.

8.0 How does the Rule Affect Owners and Operators?

This section discusses the rule’s provisions for owners and operators of residential wood heaters. The rule affects owners and operators of residential wood heaters primarily regarding proper burn practices and operation according to the instructions provided in the owner’s manual (including special specifications for pellet and chip fuel). It should first be noted, that for newly manufactured wood heaters subject to this rule, **no person is to operate such a wood heater unless it has the proper EPA-mandated permanent label affixed to it**, as provided by §60.538(a) and §60.5480(a). (See Section 4.3 of this guide for labeling requirements.)

8.1 Proper Burn Practices & Operation according to Owner’s Manual

Residential wood heaters subject to this rule are to be installed and operated in a manner consistent with the instructions on its permanent label and in the owner’s manual, including only using fuels for which the heater is certified, as noted in §60.538(e) and in §60.5480(e). Operation in a manner inconsistent with the owner’s manual will void the warranty, as noted in §60.532(g) and in §60.5474(g).

The rule includes a provision for owners and operators to use proper burn practices, including certain materials to avoid burning in the wood heater that affect the device’s operation and warranty. Table 8-1 lists the prohibited fuel types under both subparts.

Table 8-1. Prohibited Fuel Types for Wood Heater Operators under Subparts AAA and QQQQ

<i>Operators of Wood Heaters</i>	<i>Prohibited Fuel Types</i>
<p>The rule prohibits burning any of the fuel types in any wood heater subject to the rule</p> <p><i>See §60.532(f) for AAA</i></p> <p><i>See §60.5474(f) for QQQQ</i></p>	<ul style="list-style-type: none"> - Residential or commercial garbage - Lawn clippings or yard waste - Materials containing rubber, including tires - Materials containing plastic - Waste petroleum products, paints or paint thinners, or asphalt products - Materials containing asbestos - Construction or demolition debris - Paper products, cardboard, plywood, or particleboard - Railroad ties, pressure-treated wood or pallets - Manure or animal remains - Salt water driftwood or other previously salt water saturated materials - Unseasoned wood (defined as wood with an average moisture content of 20% or more) - Any materials that are not included in the warranty and owner’s manual for the subject wood heater - Any materials that were not included in the certification tests for the subject wood heater

Owners and operators should become familiar with the owner’s manual in order to develop a good working knowledge of how to operate safely their wood heater in a way that minimizes emissions/air pollution. Owner’s manuals will include guidance on the best burn practices for the subject wood heater, as required in §60.536(g) and §60.5478(f) including the following:

- proper installation, including stack height, heater location and achieving proper draft;
- proper operation and maintenance, including minimizing visible emissions;
- fuel loading and re-loading procedures, including recommendations on fuel selection and warnings on what fuels not to use (listed above in Table 8-1);
- fire starting procedures;
- proper use of air controls, including how to establish good combustion and how to ensure good combustion at the lowest burn rate for which the heater is warranted;
- ash removal procedures;
- instructions for replacement of gaskets and other parts that are critical to the emissions performance of the unit and other maintenance and repair instructions;
- for catalytic or hybrid models, procedures for achieving and maintaining catalyst activity, maintenance procedures, procedures for determining deterioration or failure, and procedures for replacement and how to exercise warranty rights;

8.2 Pellet and Chip Wood Fuel Specifications

Owners and operators of heaters certified to burn pellet fuel are to use only the grades of pellet that are specified in the owner’s manual (and which were used in the heater’s certification tests). Furthermore, owners and operators are to **burn only pellets that have been graded by a third-party organization such as the Pellet Fuels Institute, ENplus or CANplus to meet certain minimum fuel requirements.** These specifications are shown in Table 8.2 and in the rule under §60.532(e) and under §60.5474(e).

Table 8-2. Pellet Fuel Specifications under Subparts AAA and QQQQ

<i>Operators of ...</i>	<i>Minimum Fuel Specifications</i>
Wood heaters certified to burn pellet fuels must only burn pellets that have been specified in the owner’s manual and graded under a licensing agreement with a third-party organization ¹ <i>See §60.532(e) for AAA</i> <i>See §60.5474(e) for QQQQ</i>	<ul style="list-style-type: none"> - Density: ≥ 38 pounds/cubic foot with consistent hardness and energy content - Dimensions: length ≤ 1.5 inches and diameter between 0.230 and 0.285 inches - Inorganic fines: $\leq 1\%$ - Chlorides: ≤ 300 ppm by weight - Ash content: $\leq 2\%$ - Contains no demolition or construction waste - Trace metals: <100 mg/kg - None of the prohibited fuels listed in Table 8-1

¹ The Pellet Fuels Institute, ENplus and CANplus are initially deemed to be approved third-party organizations for this purpose. Additional organizations may apply to the Administrator for approval.

Chip wood fuel means wood chipped into small pieces that are uniform in size, shape, moisture, density and energy content. For wood heaters certified to burn chip wood fuel, the rule specifies that owners and

operators are to burn only chip wood fuels that have been identified in the owner’s manual and that meet certain minimum specifications. These specifications are listed in Table 8-3 in the rule under §60.532(d) and under §60.5474(d). Note that chip fuels do not need licensing by a third-party organization, as is needed for pellets.

Table 8-3. Chip Wood Fuel Specifications under Subparts AAA and QQQQ

<i>Operators of ...</i>	<i>Minimum Fuel Specifications¹</i>
Wood heaters certified to burn chip wood fuels must only burn chips that have been specified in the owner’s manual <i>See §60.532(d) for AAA</i> <i>See §60.5474(d) for QQQQ</i>	- Moisture content: < 35% - Inorganic fines: ≤ 1% - Chlorides: ≤ 300 ppm by weight - Ash content: ≤ 2% - No demolition or construction waste - Trace metals < 100 mg/kg

¹ Total weight basis moisture in the analysis sample of particulate wood fuel is determined using ASTM E871-82; standard test method for moisture analysis of particulate wood fuels.

8.3 Compliance with Other Provisions

In addition to operating the wood heater according to instructions in the owner’s manual and proper burn practices, the rule includes several other provisions that affect owners and operators:

- the rule prohibits altering, defacing or removing any permanent label, as noted in §60.538(h) and §60.5480(h);
- the rule prohibits operating a residential wood heater that has been physically altered to exceed the tolerance limits of its certificate of compliance, as noted in §60.538(g) and §60.5480(g);
- the rule prohibits operating a wood heater that was originally equipped with a catalytic combustor if the catalytic element is deactivated or removed, as noted in §60.538(f) and §60.5480(f); and
- the rule prohibits operating a residential wood heater in the U.S. if it is labeled for export only, as noted in §60.538(b) and §60.5480(b).

9.0 Who Enforces this Rule and How Do I Report a Potential Violation?

9.1 Implementation and Enforcement of the Rule

The EPA is ultimately responsible for implementation of this rule and its enforcement. In fact, there are certain enforcement aspects of this rule that EPA may not delegate. The following authority rests solely with the EPA –

- (1) Decisions on certification;
- (2) Revocation of certification;
- (3) Establishment or revision of compliance standards;
- (4) Establishment or revision of test methods;
- (5) Laboratory and third-party certifier approvals and revocations;
- (6) Enforcing provisions governing the content of owner's manuals; and
- (7) Hearings and appeals procedures.

However, as noted in §60.539a and §60.5482, the EPA may delegate some implementation and enforcement authority to a State, local or tribal authority upon request. The following enforcement authority under this rule may be delegated to State, local or tribal authorities:

- (1) Enforcement of prohibitions on the installation and operation of wood heaters in a manner inconsistent with the installation and owner's manual;
- (2) Enforcement of prohibitions on operation of catalytic wood heaters where the catalyst has been deactivated or removed;
- (3) Enforcement of prohibitions on advertisement and/or sale of uncertified model lines;
- (4) Enforcement of prohibitions on advertisement and/or sale of wood heaters that do not have the required permanent label;
- (5) Enforcement of proper labeling of wood heaters;
- (6) Enforcement of compliance with other labeling requirements for wood heaters;
- (7) Enforcement of certification testing procedures;
- (8) Enforcement of requirements for sealing of the tested wood heaters and meeting parameter limits; and
- (9) Enforcement of compliance requirements of EPA-approved laboratories

Finally, it should be noted that this compliance guide explains your federal compliance obligations with respect to this NSPS federal rule. **There may be other state or local requirements that apply to you which are different from, or more stringent than, the federal requirements described in this guide.** For example, as noted above, this rule allows EPA to delegate some enforcement authority to a State. Furthermore, as noted in §60.539a (d) and §60.5482(d), the rule does not prevent or preclude States, local or tribal authorities from adopting or enforcing more restrictive requirements. (Note that promulgating rules more restrictive than federal rules is not allowed in all States and you should therefore contact an authority in your State environmental agency to determine what is required in your location.) For more information on the rules that apply in your State, please begin by contacting EPA's regional representative, listed in Section 10.0 of this guide, who can answer your questions and/or direct you to the appropriate State contact.

9.2 What to Do in the Event of a Potential Violation

If you are concerned that you or someone else may have violated the requirements of this rule, it is important to report immediately the environmental violation to the EPA's Office of Enforcement and Compliance Assurance (OECA). OECA's *Wood Heater Compliance Monitoring Program* website is at <http://www2.epa.gov/compliance/wood-heater-compliance-monitoring-program>.

If the potential violation is your own and you would like further information regarding how to ensure compliance, you may wish to contact directly OECA's lead for wood heater compliance, Rafael Sanchez, by e-mailing him at sanchez.rafael@epa.gov, calling him at (202) 564-7028 or faxing him at (202) 564-0050. You may also reach Dr. Sanchez via his mailing address:

Rafael Sanchez, Ph.D.
Wood Heater Program Lead
Office of Compliance
U.S. Environmental Protection Agency
Room 7149-D
1200 Pennsylvania Ave., NW
Washington, DC 20460

If you wish to report a potential violation by another person or entity (whether a neighbor, manufacturer, testing laboratory, third-party certifier, retailer, wholesaler, importer or distributor) you may also do so via OECA's *Report Environmental Violations* website at <http://www2.epa.gov/enforcement/report-environmental-violations>. However, as noted in Section 9.1 of this guide, certain enforcement authorities under this rule may have been delegated to State, local or tribal authorities. If this is the case in your State, you should contact these State, local or tribal authorities in the event of a violation.

For questions regarding violations, you may also contact the EPA officials listed in Section 10.1 under *Who can I contact if I have questions or need further assistance?*

10.0 Where is More Information Available?

10.1 Who Can I Contact if I Have Questions or Need Further Assistance?

For questions about this final rule for new residential wood heaters, hydronic heaters, and forced-air furnaces contact Ms. Amanda Aldridge at the Office of Air Quality Planning and Standards, Outreach and Information Division (C304-05), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number (919) 541-5268; fax number (919) 541-2664; email address: aldridge.amanda@epa.gov. Mr. David Cole may also be contacted at the same address (above), telephone number (919) 541-5565; fax number (919) 541- 0242; email address: cole.david@epa.gov.

For additional assistance at the EPA regional level, the following region-specific EPA personnel may also be contacted at the Regional Offices:

- Region 1 – Alison Simcox, at simcox.alison@epa.gov;
- Region 2 – Ken Fradken, at fradken.kenneth@epa.gov;
- Region 3 – Andrew Kreider, at kreider.andrew@epa.gov;
- Region 4 – Joel Huey, at huey.joel@epa.gov;
- Region 5 – Steve Rosenthal, at rosenthal.steve@epa.gov;
- Region 6 – Joe Kordzi, at kordzi.joe@epa.gov;
- Region 7 – Lisa Hanlon, at hanlon.lisa@epa.gov;
- Region 8 - Crystal Ostigaard, at ostigaard.crystal@epa.gov;
- Region 9 - Katie Stewart, at stewart.katie@epa.gov; and
- Region 10 – Lucy Edmondson, at edmondson.lucy@epa.gov.

To determine which region your state is located in, please refer to the Map of EPA Regions provided on the following EPA webpage - <http://www.epa.gov/oust/regions/regmap.htm>

For questions regarding a potential violation, you may also contact EPA’s Office of Enforcement and Compliance Assurance (OECA) and visit OECA’s *Wood Heater Compliance Monitoring Program* website at <http://www2.epa.gov/compliance/wood-heater-compliance-monitoring-program>. OECA’s lead for wood heater compliance is Rafael Sanchez at the Office of Compliance, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460; telephone number (202) 564-7028; fax number (202) 564-0050; e-mail address: sanchez.rafael@epa.gov.

10.2 Where Can I Find the Rulemaking and Related Documents?

- The final “Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces” rulemaking (**80 FR 13671**, March 16, 2015) is available as a Federal Register document at <http://www.gpo.gov/fdsys/pkg/FR-2015-03-16/pdf/2015-03733.pdf> and can also be found on the web with paragraph-specific URLs at <https://www.federalregister.gov/articles/2015/03/16/2015-03733/standards-of-performance-for-new-residential-wood-heaters-new-residential-hydronic-heaters-and>.
- All rulemaking documents and information, including background data and analyses, regarding this rulemaking can be found in Docket ID EPA-HQ-OAR-2009-0734 on Regulations.gov at <http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OAR-2009-0734>

- The compliance requirements for residential wood heaters, including a list of all applicable test methods can be found at: <http://www2.epa.gov/residential-wood-heaters/compliance-requirements-residential-wood-heaters>
- The regulatory development timeline for this rulemaking can be found at: <http://yosemite.epa.gov/oepi/RuleGate.nsf/byRIN/2060-AP93>
- The wood heater compliance monitoring program, administered by the Office of Enforcement and Compliance Assurance (OECA), including a list of FAQs, can be found at <http://www2.epa.gov/compliance/wood-heater-compliance-monitoring-program>
- A list of currently EPA-certified wood heaters can be found at <http://www2.epa.gov/compliance/list-epa-certified-wood-stoves>
- A list of hydronic heaters currently qualified to the Phase 2 EPA Voluntary Program can be found at <http://www.epa.gov/burnwise/owhlist.html>

The EPA will update lists of certified wood heaters on a regular basis.

10.3 Where Can I Find Other Guidance about Residential Wood Heating?

- Visit EPA's Burn Wise website to find information to help consumers make informed decisions about what it means to burn wise, including the importance of burning the right wood, the right way, in the right wood-burning appliance, at <http://www.epa.gov/burnwise/> and <https://www.facebook.com/EPABurnWise> and <https://twitter.com/epaburnwise>
- The EPA's *Strategies for Reducing Residential Wood Smoke* (Publication No. EPA-456/B-13-001, revised March 2013) can be found at <http://www.epa.gov/burnwise/pdfs/strategies.pdf>

10.4 How Useful Was This Guide?

The EPA is continually striving to improve outreach to regulated entities and the public. Please let us know how useful this guide was to you, including its readability and suggestions you may have for improvements. You may direct all feedback to Ms. Amanda Aldridge at the Office of Air Quality Planning and Standards, Outreach and Information Division (C304-05), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number (919) 541-5268; fax number (919) 541-2664; email address: aldridge.amanda@epa.gov. Mr. David Cole may also be contacted at the same address (above), telephone number (919) 541-5565; fax number (919) 541- 0242; email address: cole.david@epa.gov.

Thank you.

United States
Environmental Protection
Agency

Office of Air Quality Planning and Standards
Outreach and Information Division
Research Triangle Park, NC

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