



**COMMENTS OF HEARTH, PATIO & BARBECUE ASSOCIATION ON EPA'S
PROPOSED STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD
HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR
FURNACES, AND NEW RESIDENTIAL MASONRY HEATERS**

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TABLE OF CONTENTS

TABLE OF CONTENTS.....	ii
I. INTRODUCTION	1
II. SUMMARY OF KEY HPBA COMMENTS	4
A. Administrative, Compliance, And Transition Provisions	4
B. Test Methods.....	5
C. Woodstove Standards.....	5
D. Hydronic Heater Standards	6
E. Warm Air Furnace Standards.....	7
III. LEGAL BACKGROUND ON SECTION 111 AND PRECISION ISSUES	8
A. EPA Must “Adequately Demonstrate” that Its Standards Reflect the “Best System of Emission Reduction” (“BSER”).	8
1. Subpart AAA Standards Should Be Based on Data Derived from the Proposed Reference Methods.	9
2. EPA Must Adhere to Limits on Technology Transfer Analysis in Setting Subpart AAA Standards.	9
3. EPA Must Adequately Account for Test Method Imprecision.....	10
4. EPA Must Appropriately Account for Emission Variability Based on Choice of Fuel in Setting Subpart AAA Standards.	11
5. The Standard and the Method Used to Determine Compliance with the Standard Must Be Evaluated Together When Determining BSER.....	12
B. EPA Must Rigorously Consider the Costs and Adverse Environmental Impacts of Any Standard Considered.	13
IV. COMMENTS ON ADMINISTRATIVE, COMPLIANCE, AND TRANSITION PROVISIONS	14
A. EPA Needs to Further Clarify the Scope and Applicability of the Proposed Rule.....	14
B. EPA’s Proposed Certification Provisions Are Needlessly Duplicative and Restrictive...	17
1. Overview of EPA’s Proposal	17
2. Independent Third Party Certifying Entities Should Issue Certificates of Compliance Subject to Limited EPA Oversight	18
a. Independent Third Parties Are Better Suited to Issue Certificates of Compliance	18
b. Independent Third Parties Have Strong Incentives to Issue Certifications Reliably and Effectively and to Ensure Ongoing Compliance	19
c. Independent Third Party Certification Systems Have Been Successfully Implemented in Many Contexts.....	20

d. EPA Can and Should Retain an Oversight Function	21
3. EPA Should Not Prohibit Certifying Entities from Certifying Their Own Test Reports	22
4. EPA Should Clarify the Prohibition on Laboratories Performing Initial Certification Tests on Any Models for Which It Has Conducted Research and Development Testing Within the Last Five Years.....	24
5. EPA Should Remove the Requirement for Test Laboratories to Seal Tested Appliances.....	24
6. There Is No Rational Justification for Requiring 30 Days (or More) Advance Notification of Certification Testing.....	25
7. Requiring Manufacturers That Choose Not To Seek Recertification To Send Notice To EPA Unnecessarily Generates Costly Paperwork.	25
C. HPBA Generally Supports EPA’s Proposal to Rely Primarily on Independent Third Party Certifying Entities for Quality Assurance/Control, but Some Aspects of EPA’s Proposal Require Revision.....	26
D. EPA Has Not Justified the New Revocation and Suspension Procedures.....	28
E. EPA Should Revise the Proposed Audit Testing Provisions (§ 60.533(n)).....	29
1. Precision Concerns.....	30
2. The Proposed Audit Testing Is Not Only Duplicative of an Independent Third Party Certification System, It Is Less Effective.....	32
3. EPA’s Proposed Funding Mechanism Raises a Number of Concerns	33
4. HPBA Objects to Other Proposed Changes To Audit Testing	34
F. EPA Must Include Additional Transitional Provisions	35
1. EPA Needs to Address Transitional Issues for <i>All</i> Categories of Appliances Subject to the Proposed Rule, Not Just Woodstoves	36
2. EPA Has Properly Proposed to “Grandfather” Existing Woodstove Certifications...	37
3. EPA Needs to Strengthen and Expand Its Proposed Sell-Through Provisions	38
4. The Proposed Rule’s Provisions for Quality Assurance/Control Plans for Grandfathered Units Must Be Changed.....	39
5. Requirements Imposed Prior to the Effective Date of the Final Rule are Invalid	39
G. EPA Must Revise the Delegation Provisions to Require EPA to Retain Sole Enforcement Authority Over Reporting and Recordkeeping, Revocation of Certification, and Hearings and Appeals Procedures	40
V. COMMENTS ON PROPOSED TEST METHODS.....	40
A. Legal Background.....	41
1. Basic NTTAA Principles	41
2. Specific NTTAA Issues Implicated in this Rulemaking.....	43

3.	Other Principles Guiding EPA’s Selection of Test Methods.....	45
B.	Relevant Voluntary Consensus Test Methods Implicated in this Rulemaking.....	45
1.	The ASTM and CSA Methods Implicated Here Have Been Rigorously Developed in Conformance with NTTAA’s Expectations.	47
2.	EPA Has Participated in the Development of All Relevant ASTM Methods, As Required By NTTAA.....	48
3.	EPA’s Position That Lack of Participation by States Or Other Parties in the ASTM And CSA Proceedings Warrants the Effective Reopening of Those Proceedings in This Rulemaking Proceeding Is Unfounded.	48
C.	EPA Must Use the Relevant ASTM and CSA Methods, Absent NTTAA Findings to Support Use of Alternative “Government-Unique” Methods or Specifications.....	49
1.	Generic Methods.....	50
2.	Appliance-Specific Methods.....	50
a.	Pellet Appliances	50
b.	Woodstoves.....	50
1.	EPA’s Proposed Deviations from ASTM E2780-10	51
2.	EPA Has Failed to Justify Its Departures from the ASTM Method under NTTAA.....	52
c.	Hydronic Heaters	53
1.	Cycling Hydronic Heaters.....	53
i.	EPA’s Proposed Deviations from ASTM E2618-13	54
ii.	EPA’s Proposed Test Method for Cycling Models is Unsupported Under NTTAA And On the Merits.....	55
2.	Hydronic Heaters with Partial Thermal Storage.....	56
i.	EPA Must Use ASTM E2618-13 Annex A2 Instead of the Proposed BNL Method.....	56
ii.	Use of the BNL Method Cannot be Supported Under NTTAA	58
iii.	Use of EN 303-05 Is Unwarranted.....	59
3.	Hydronic Heaters with Full Thermal Storage Units	60
d.	Warm Air Furnaces.....	61
3.	EPA’s Proposed Compliance Algorithm is Not Defensible	61
VI.	COMMENTS ON PROPOSED WOODSTOVE STANDARDS	63
	Summary of EPA’s Proposal	63
	Overview of Key HPBA Comments.....	64
A.	EPA’s Proposed Step 1 Standard Is Appropriate, but Many of Its Related Requirements Need Revision.....	66

B. EPA’s Proposed Step 2 and 3 Standards Do Not Comport with CAA Section 111	66
1. EPA Has Not Adequately Demonstrated that the Proposed Step 2 and 3 Standards Are BSER.....	67
a. Test Method Imprecision Renders EPA Proposed Step 2 and 3 Limits Inconsistent with BSER.	67
1. Background on Test Methods and Previous Understanding of Variability	67
2. Precision Analysis of EPA Woodstove Proficiency Test Data.....	68
3. Attempts to Write off Curkeet Ferguson Are Factually Flawed and Completely Unsupportable.	72
b. Certification Test Scores Generated in the Laboratory Do Not Correlate with Field Performance of Certified Appliances	73
1. HPBA’s Response to the Critiques of Houck 2	75
2. EPA’s Failure to Address Houck 2.....	76
2. EPA Failed to Properly Analyze Costs, and the Proposed Step 2 and 3 Standards Are Not Cost-Effective	76
a. EPA’s Analyses Are Fatally Flawed.....	77
b. NERA’s Analysis Shows that EPA’s Proposed Step 2 and 3 Standards Are Not Cost Effective.....	79
3. EPA Has Failed to Adequately Address the Change-Out Implications of Its Proposal.....	82
4. EPA Proposes to Use Legally Unsupported and Technically Unsound Test Methods.....	87
C. EPA Should Revisit Certain Other Elements of the Proposed Subpart AAA.	88
1. EPA Lacks a Sufficient Basis to Establish Its Proposed Step 2/3 Cordwood Standard	88
a. A Mandatory Cordwood-Based Standard Is Incompatible with CAA Section 111.....	88
b. EPA Should Consider Alternative Means to Encourage Increased Cordwood Testing.....	89
1. CAA Section 111(j) Framework.....	91
2. EPA Should Set an Alternative Emissions Target of 7.5 g/hr and Grant Alternative Certificates of Compliance for Model Lines that Can Demonstrate Compliance with that Target Through Testing Pursuant to the New ASTM Cordwood Test Method.....	91
3. EPA Has Authority to Issue Alternative Certificates of Compliance Under Section 111(j).....	92
2. EPA Needs to Strengthen the Proposed Transition Provisions	94

a.	HPBA Supports EPA’s Proposal To Grandfather Currently Certified Appliances for the Full Duration of Their Certifications, But Emphasizes the Need to Clarify Regulatory Requirements Applicable To Such Models.....	94
b.	EPA Must Provide An Adequate Sell-Through Period.	96
VII.	COMMENTS ON PROPOSED HYDRONIC HEATER STANDARDS.....	98
	Background.....	98
	EPA’s Proposal.....	102
A.	EPA’s Proposed 0.32 lb/MMBtu Step 1 Emission Limit Is Appropriate, but EPA Should Not Impose a 7.5 g/hr Cap for Individual Test Runs, and It Should Not Mandate Testing with Two Fuel Types	104
B.	EPA’S Proposed Step 2/3 Standards Are Not BSER	106
1.	EPA Lacks Reliable Data for Standards Setting.....	107
2.	EPA Has Failed To Adequately Analyze Costs, and the Proposed Step 2 and Step 3 Standards Are Not Cost Effective.....	113
a.	EPA’s Analyses Are Fatally Flawed.....	114
b.	NERA’s Analysis Shows that EPA’s Proposed Step 2 and 3 Standards Are Not Cost Effective.....	116
C.	EPA Needs to Address Transition Issues for Hydronic Heaters.....	119
1.	EPA Must Grandfather Qualified Hydronic Heaters	119
2.	EPA Must Provide Sell-Through Relief	120
VIII.	COMMENTS ON PROPOSED WARM AIR FURNACE STANDARDS	122
	Background.....	122
	EPA’s Proposal.....	123
A.	EPA’s Proposed Step 1 Standard Is Appropriate.....	124
B.	EPA’s Proposed Step 2/3 and Alternative Step 2 Standards Are Not BSER	126
1.	EPA Cannot Support Its Adequate Demonstration Finding.....	126
2.	EPA Did Not Adequately Consider Costs or Support Its Finding that the Proposed Step 2/3 and Alternative Step 2 Standards are Cost Effective.....	128
C.	Transition Provisions are Vital to the Survival of the Warm Air Furnace Industry	129
IX.	COMMENTS ON LABELING AND CONSUMER SUPPORT PROVISIONS	131
A.	EPA Should Revise Its Proposed Permanent Labeling Requirements.	131
1.	EPA Must Delete Language Purporting To Require Homeowners to Cease Using Affected Wood Heaters After A Certain Time Period.....	132
2.	Requiring the Permanent Label to Be Visible After Installation Is Infeasible for Some Appliance Types.	133
B.	HPBA Supports Discontinuing The Use Of Hangtags.	133

C. EPA Cannot Regulate Marketing Information in the Proposed Rule.	134
D. EPA Should Not Require Revision of Labeling And Marketing Information Based On Emissions Testing During Emissions Audits.....	135
E. EPA Must Continue To Rely On Owner’s Manuals To Guide Consumers on Proper Installation Practices and Operating Procedures, But Should Change Certain Requirements.	136
F. EPA Should Not Require the Provision Or Sale Of Ancillary Products, Such As Carbon Monoxide (“CO”) Monitors Or Moisture Meters, In This Rulemaking.	137
X. COMMENTS ON OTHER ISSUES	138
A. Efficiency and Carbon Monoxide (“CO”) Standards	138
B. Small Business Regulatory Enforcement Fairness Act (“SBREFA”) Panel Report	139
ATTACHMENTS TO HPBA COMMENTS	143

I. INTRODUCTION

The Hearth, Patio & Barbecue Association (“HPBA”) submits these comments on the U.S. Environmental Protection Agency’s (“EPA’s”) proposal to revise its regulation of new Residential Home Heating (“RWC”) appliances under Section 111 of the Clean Air Act that was published in the Federal Register at 79 Federal Register 6,330 (Feb. 3, 2014). That proposal consists of proposed modifications to the existing 40 C.F.R. Part 60, Subpart AAA (covering room heaters) and proposals for two new Subparts, Subparts QQQQ and RRRR (covering central heating systems and masonry heaters).

Based in Arlington, Virginia, HPBA is the principal national industry association representing manufacturers, retailers, distributors, representatives, service firms, and allied associates for all types of hearth, barbecue, and patio appliances, fuels, and accessories, including solid fuel-fired home heating appliances, including woodstoves, pellet stoves, hydronic heaters, and warm air furnaces. The 2500-member association provides professional member services and industry support in education, statistics, government relations, marketing, advertising, and consumer education.

HPBA has a long track record of working cooperatively with the EPA and the States on wood smoke issues of common concern. This partnering started with the regulatory negotiations in the late 1980s that produced the current NSPS. Other partnership accomplishments include numerous wood stove changeout programs including, most prominently, the program in Libby, Montana that changed out over 1,000 uncontrolled (i.e., not EPA-Certified) stoves, resulting in remarkable improvements in air quality both inside and outside. In addition, HPBA partnered with EPA in developing and implementing two innovative voluntary programs for hearth appliances: the voluntary program for Hydronic Heaters, and the later voluntary program for fireplaces. The Hydronic Heater voluntary program is particularly noteworthy, as it fostered the development of a new generation of emission-controlled models that EPA has acknowledged have reduced emissions approximately 90% from baseline, uncontrolled levels.

HPBA approached the review and revision of the NSPS for RWC appliances in the cooperative spirit that has guided its long track record of working cooperatively with EPA and other stakeholders. HPBA’s policy from the beginning of the review has been to support the development of technically sound and cost-effective regulations that would govern the products manufactured in our industry over the next decade. And we have done far more than pay lip service to this policy: we have invested heavily in it, both in the money we have spent to support projects to support the review (over \$1.4 million and still counting), and in many hundreds of hours of sweat equity contributions from our members. These projects include the following (the majority of which are already in the Docket for this rulemaking proceeding):

- ASSESSMENT OF THE ECONOMIC IMPACTS OF NSPS “STRAWMAN” PROPOSALS ON HEARTH PRODUCT COMPANIES (Oct. 21, 2010) [EPA-HQ-OAR-2009-0734-0134 (Attachment 4)]
- Rick Curkeet and Robert W. Ferguson, EPA WOOD HEATER TEST METHOD VARIABILITY STUDY: ANALYSIS OF UNCERTAINTY, REPEATABILITY AND REPRODUCIBILITY BASED ON THE EPA ACCREDITED LABORATORY PROFICIENCY TEST DATABASE (Oct. 6, 2010) [EPA-HQ-OAR-2009-0734-0202]

- Robert W. Ferguson, AN EVALUATION OF OVERALL EFFICIENCY FOR EPA CERTIFIED NON-CATALYTIC WOOD HEATERS (July 21, 2011) [EPA-HQ-OAR-2009-0734-0318]
- Robert W. Ferguson, A REPORT ON THE PARTICULATE EMISSIONS PERFORMANCE OF MASONRY HEATERS- DEFINITION, DATA, ANALYSIS AND RECOMMENDATIONS (Feb. 13, 2008) [EPA-HQ-OAR-2009-0734-0269]
- Robert W. Ferguson, FINAL REPORT: EPA WOOD HEATER EMISSION TEST METHOD COMPARISON STUDY (Dec. 1, 2010) [EPA-HQ-OAR-2009-0734-0278]
- Robert W. Ferguson, HPBA ENHANCED CERTIFIED WOOD HEATER DATABASE (Feb. 25, 2010) [EPA-HQ-OAR-2009-0734-0150; EPA-HQ-OAR-2009-0734-0150]
- Robert W. Ferguson, NSPS FIREPLACE APPLICABILITY/DEFINITION PROPOSAL AND SUPPORTING DOCUMENTS (June 6, 2011) [EPA-HQ-OAR-2009-0734-0271]
- Robert W. Ferguson, A REPORT ON THE IMPACT OF PELLET FUEL ASH CONTENT ON PARTICULATE EMISSION PERFORMANCE OF FIVE PELLET HEATERS (Oct. 21, 2010) [EPA-HQ-OAR-2009-0734-0006]
- Robert W. Ferguson & David Menotti, MASONRY HEATER NSPS APPLICABILITY/DEFINITION PROPOSAL FINAL DRAFT (Sept. 24, 2012) [EPA-HQ-OAR-2009-0734-0268]
- Robert W. Ferguson, WOOD STOVE MARKET IMPACTS INCLUDING EFFICIENCY AND EMISSIONS STANDARDS (SLIDES) (presented to the National Educational Forum on the Residential Wood Heater NSPS Nov. 8, 2012) [EPA-HQ-OAR-2009-0734-0128]
- David Harrison, Andrew Foss, and Andrew Stuntz, COST EFFECTIVENESS OF ALTERNATIVE WOOD STOVE NEW SOURCE PERFORMANCE STANDARDS (presented to EPA Feb. 2013)
- David Harrison, Andrew Foss, and Andrew Stuntz, COST EFFECTIVENESS OF ALTERNATIVE WOOD STOVE NEW SOURCE PERFORMANCE STANDARDS (presented to OMB Sept. 25, 2013) [EPA-HQ-OAR-2009-0734-0310]
- David Harrison, Andrew Foss, and Andrew Stuntz, COST EFFECTIVENESS OF ALTERNATIVE HYDRONIC HEATER NEW SOURCE PERFORMANCE STANDARDS (presented to EPA Nov. 12, 2013 and OMB on Nov. 14, 2013) [EPA-HQ-OAR-2009-0734-0204]
- PROPOSED REVISIONS TO THE NSPS FOR RESIDENTIAL WOOD HEATERS- INDUSTRY PERSPECTIVE (SLIDES) (Oct. 11, 2012) [EPA-HQ-OAR-2009-0734-0270].
- James E. Houck, A COMPARISON OF PARTICULATE EMISSION RATES FROM THE IN-HOME USE OF CERTIFIED WOOD STOVE MODELS WITH USEPA CERTIFICATION EMISSION VALUES AND A COMPARISON BETWEEN IN-HOME UNCERTIFIED AND CERTIFIED WOOD STOVE PARTICULATE EMISSIONS (Feb. 1, 2012) [EPA-HQ-OAR-2009-0734-0143]

- James E. Houck, THE FRACTION OF FREESTANDING WOOD-FUELED STOVES IN CURRENT USE THAT ARE U.S. EPA CERTIFIED CORDWOOD STOVES AND WOOD PELLET STOVES (July 23, 2011) [EPA-HQ-OAR-2009-0734-0264]
- James E. Houck, Jeremy Clark & Thomas Christensen, EVALUATION OF METHOD 28 WOOD HEATER BURN RATES (Sept. 21, 2009) [EPA-HQ-OAR-2009-0734-0261]
- NSPS REVIEW- HPBA POWERPOINT PRESENTATION PRESENTED AT WESTAR-EPA-HPBA MEETING IN PORTLAND, OREGON (Nov. 17-19, 2009)
- David Menotti & Robert W. Ferguson, NSPS REGULATED PRODUCT APPLICABILITY/DEFINITION PROPOSAL (June 6, 2011) [EPA-HQ-OAR-2009-0734-0274]
- David Menotti & Robert W. Ferguson, NSPS UTILITY HEATER APPLICABILITY/DEFINITION PROPOSAL (Aug. 10, 2011) [EPA-HQ-OAR-2009-0734-0275]
- THE IMPACT OF PELLET FUEL ASH CONTENT ON PARTICULATE EMISSION PERFORMANCE OF PELLET HEATERS (SLIDES) (Oct. 21, 2010) [EPA-HQ-OAR-2009-0734-0134 (Attachment 3)]
- WOOD HEATER EMISSION TEST METHOD COMPARISON (SLIDES) (Oct. 21, 2010) [EPA-HQ-OAR-2009-0734-0134 (Attachment 2)]

In addition, over the past seven years, HPBA has supported the development of modern, state of the art test methods by voluntary consensus standard development organizations for use in the revised NSPS program. That effort has resulted in the establishment of the following test methods:

- ASTM E2515-11 (PM Emissions Measurement in Dilution Tunnels).
- ASTM E2780-10 (Woodstove Emissions)
- ASTM E2618-13 (Hydronic Heater Emissions, including cycling, partial thermal storage and full thermal storage methods)
- ASTM E2779-10 (Pellet and Bio-Fuel Heater Emissions)
- ASTM E2817-11 (Masonry Heater Emissions)
- CSA B415.1-10 (e.g., RWC efficiency, Warm Air Furnace Emissions)

In general, HPBA is very disappointed that EPA has largely ignored or attempted to minimize the implications of many of the submissions that we have made to provide a solid foundation for the revised NSPS for residential wood heating appliances. We are hopeful that EPA will cure this problem in responding to comments on the proposal. HPBA's overall policy position remains the same: we support revisions to the NSPS, including expanding it to cover more appliance categories. But the revised standards must reflect a rigorous application of the

Clean Air Act Section 111 decision criteria and, with regard to test methods, compliance with the National Technology Transfer and Advancement Act of 1995. Unfortunately, that is not the case for most of EPA's proposals.

II. SUMMARY OF KEY HPBA COMMENTS

We have organized our comments by subject matter. Each of the sections of the comments presents a comprehensive review of EPA's proposals in the subject area, and HPBA's positions on those proposals. These comments consist of ten parts, followed by attachments. After the Introduction (Part I) and this Summary (Part II), in Part III, HPBA provides an overview of some of the key legal principles that govern this rulemaking and frame HPBA's comments. Part IV focuses on EPA's changes to the administrative, compliance, and transition provisions in the proposed rule. In Part V, HPBA comments on EPA's proposed test methods. Part VI addresses EPA's proposed changes to the existing hearth appliance NSPS for woodstoves, found at existing Subpart AAA. In Part VII, HPBA comments on the regulation of hydronic heaters for the first time in proposed Subpart QQQQ. Part VIII addresses EPA's proposed regulation of warm air furnaces (again for the first time) in proposed Subpart QQQQ. In Part IX, HPBA comments on EPA's proposed labeling and consumer support provisions. Finally, in Part X, HPBA responds to EPA's explicit requests for comments on issues that were not addressed in the other parts of these comments.

Summaries of the highlights of the HPBA positions are contained in each of the comment sections, with the major points summarized below.

A. ADMINISTRATIVE, COMPLIANCE, AND TRANSITION PROVISIONS

A distinguished group of industry experts provided EPA a series of definitions of hearth appliance categories. Those definitions were intended to draw "bright lines" that would facilitate smooth implementation of the revised program, yet EPA has ignored them. EPA's failure to incorporate the recommended definition for fireplaces is particularly troublesome given that fireplaces are not being regulated, and a clear definition is therefore needed to draw the line between what is regulated and what is not.

The independent third party laboratory certification system that EPA has proposed is barely recognizable as a program bearing that title. The record is clear that independent third party laboratory certification systems work in a variety of contexts—most tellingly for hearth appliances themselves, which are already regulated this way for compliance with safety standards. But that is not the scheme that EPA proposes here. For example, EPA insists on second guessing every decision made by accredited independent third party laboratories. This adds expense and delay to the process without yielding any value. EPA needs to recognize that independent third party certification systems work, and revise the proposed rule accordingly.

EPA's proposed modifications to the emissions audit program are far too modest. EPA continues to believe that emissions retesting is an appropriate quality assurance/control tool, even though the quality assurance/control requirements of the independent third party laboratory certification system that EPA has proposed are the far superior option. Moreover, the funding mechanism in the current Random Compliance Audit program, which EPA proposes to continue,

has never worked and could never work—a conclusion made even more obvious in light of the implications of EPA-proposed changes to the audit program. Finally, EPA refuses to appropriately address (in this area and generally) the implications of the poor precision of the woodstove test methods, as well as the nearly total lack of an understanding of the precision of the test methods for the other appliance categories. No emissions audit program can legally proceed without taking precision into account.

EPA has long acknowledged the critical necessity for lead time for manufacturers to respond to new regulatory requirements. Regrettably, however, it has addressed this issue (albeit inadequately) only for woodstoves and pellet stoves that are currently certified. It is imperative that EPA also address transition issues for other appliance categories using the three tools it has available to facilitate smooth transitions—delays in effective dates, “grandfathering,” and sell-through relief. HPBA’s comments for each of the appliance categories set forth specific transition proposals that are appropriately tailored to the needs of each category.

B. TEST METHODS

EPA has failed to meet its obligations under NTTAA to use consensus-based test methods, absent findings that use of such methods, or parts thereof, would be illegal or impractical. None of EPA’s proposals to use test methods other than consensus-based methods, or to substitute EPA’s proposed provisions for those set forth in consensus-based methods, are supported by the findings required under NTTAA, nor is it conceivable that they could be in all but one instance.

EPA’s proposed substitutes (in whole or in part) for consensus-based test methods are also unsound technically, as persuasively demonstrated by the comments of the EPA Accredited Wood Burning Appliance Emissions Testing Laboratory Coalition, an *ad hoc* group organized to review and submit comments on the proposed rule. HPBA supports those comments.

EPA’s proposed new compliance algorithm reflects a fundamental departure from the foundational principle that performance standards and test methods are an indivisible whole, and EPA cannot lawfully use a database generated with one method to set standards that will be enforced with a radically different method. The implications of EPA’s attempt to do so are persuasively and dramatically demonstrated in a paper sponsored by HPBA (Attachment 1 to these comments), using Monte Carlo analysis, a sophisticated modeling tool recommended for use in such situations by EPA guidance.

C. WOODSTOVE STANDARDS

HPBA supports EPA’s Step 1 proposal as appropriately reflecting the Best System of Emission Reduction (“BSER”). HPBA, however, objects to EPA’s proposed test methods for Step 1, for the reasons detailed in HPBA’s comments to those methods (Part VI.A).

By contrast, EPA’s Step 2/3 proposals fail to reflect BSER for several reasons, and accordingly must be abandoned. *First*, EPA cannot support a finding that the proposed standards are adequately demonstrated, because it is arbitrary and capricious for the Agency to set standards that are within the range of uncertainty of the test methods, and because EPA cannot show that the proposed standards will achieve real-world reductions in emissions, when appliances are installed in homes and consumers burn cordwood. *Second*, EPA cannot show that

its proposal is the best “system” of emission reduction, because it will slow change outs of the six million uncontrolled woodstoves still in American homes—an environmental consequence of its proposal that it has also failed to take into account.

EPA has also failed to adequately consider costs in developing the Step 2/3 standards. Its attempt at considering costs is hopelessly flawed, as demonstrated by NERA, a renowned economic consulting firm retained by HPBA to address these issues. NERA’s independent cost effectiveness analysis (Attachment 2 to these comments) shows that EPA’s Step 2/3 proposals are not cost effective, by large margins.

HPBA strongly opposes EPA’s proposal for Step 1 testing of woodstoves with *both* crib wood and cordwood. However, HPBA supports a move toward more “real world” relevant certification testing that would per force include testing with cordwood. In this regard, HPBA is strongly supporting a broad stakeholder effort to develop such a test method under ASTM auspices, which is well underway. To incentivize a move toward cordwood, while acknowledging the data deficiencies that preclude setting standards that require cordwood testing at this time, HPBA recommends an “off ramp” approach utilizing EPA’s authority to grant innovative technology waivers under Section 111(j) of the Clean Air Act.

D. HYDRONIC HEATER STANDARDS

EPA’s proposed Step 1 emission limit of 0.32 lb/MMBtu is appropriate and achievable. That limit has been adequately demonstrated as achievable by manufacturers, taking into account its cost effectiveness and other relevant Clean Air Act Section 111 factors. EPA should not, however, impose a 7.5 g/hr cap for individual test runs, as EPA has not justified imposition of that cap in any way, nor does it make any sense. Finally, EPA cannot require testing with two fuel types during Step 1 for the reasons set forth above.

HPBA strongly opposes EPA’s proposed Step 2/3 standards. They are not BSER for a number of reasons. EPA lacks sufficient data derived using the required test methods to support a finding of adequate demonstration. EPA has no cordwood data whatsoever for cycling models. And, upon elimination of data derived using flawed, outdated test methods, as well as data derived using a fundamentally different test method that cannot be converted to compliance method equivalents, EPA is left with just three data points, none of which meet the proposed Step 2/3 standard. EPA cannot establish the Step 2/3 standards based on that limited data, particularly where it has not evaluated the precision of the hydronic heater test methods and lacks knowledge of whether test results derived from burning cribs are representative of real world emissions performance.

Not only are EPA’s proposed Step 2/3 standards not adequately demonstrated, they are far from cost effective. EPA’s attempt to assess costs for hydronic heaters is flawed, as NERA explains in detail. And NERA’s independent analysis (Attachment 3 to these comments), using inputs developed by a rigorous process involving industry experts, demonstrates that the proposed Step 2/3 standards for hydronic heaters would be extremely cost ineffective.

EPA must address transition issues for hydronic heaters. As currently drafted, the proposed rule does not contain any grandfathering or sell-through provisions for these appliances. EPA

should grandfather all Phase 2 models qualified under EPA's Voluntary Program until either the expiration of their qualification period or two years after the effective date, whichever is later. Moreover, EPA must provide sell-through relief to hydronic heater manufacturers as they transition to NSPS regulation. Given EPA's longstanding acknowledgment of the need to allow manufacturers, distributors, and retailers to recoup their investment in inventory in the channels of trade (including pre-NSPS models), it is arbitrary not to afford sell-through relief to hydronic heater manufacturers.

E. WARM AIR FURNACE STANDARDS

HPBA supports EPA's proposal to use the consensus-based CSA B415.1-10 as the test method for warm air furnaces and to set the Step 1 emissions limit at the "passing grade" embedded in that standard, *i.e.*, 0.93 lb/MMBtu. However, EPA must provide significant additional lead time to manufacturers of larger furnaces ($\leq 65,000$ Btu/hr delivered heat output) to comply with Step 1. EPA clearly recognizes that reasonable lead time for R&D, product development, and certification of complying models is an important element of the BSER determination. Additional lead time is warranted here given that, among other things, there are very few, if any, larger furnaces listed to the CSA B415.1-10 "passing grade" and very few laboratories have any experience testing with CSA B415.1-10.

HPBA strongly opposes EPA's proposed Step 2/3 standard because EPA cannot support an adequate demonstration finding under Clean Air Act Section 111. EPA lacks sufficient data from testing with CSA B415.1-10. In fact, EPA's proposal is so opaque as to what data the Agency is relying upon that EPA must disclose that data and allow for additional comment. Transparency and adequate notice aside, the data that EPA appears to be relying upon are too thin a reed to support an adequate demonstration finding, particularly given that EPA has not considered the precision of CSA B415.1-10. EPA also wrongly assumes that BSER for warm air furnaces may be demonstrated at the same levels as hydronic heaters. In so assuming, EPA has overlooked key engineering and safety considerations that likely preclude the transfer of technology from hydronic heaters to warm air furnaces, which an HPBA consultant with decades of experience in hearth appliance product development explains in detail (Attachment 4 to these comments).

Although NERA did not prepare an independent cost effectiveness analysis for warm air furnaces, the many flaws that it has identified in EPA's economic impacts assessment apply to warm air furnaces as well. Moreover, EPA's flawed assumption that it is possible to transfer technology from hydronic heaters to warm air furnaces dooms not only the Agency's adequate demonstration finding, but also its conclusion that the costs of compliance for the two appliance categories will be the same.

EPA must use all three of its transition tools to facilitate a smooth transition to regulation for warm air furnace manufacturers. Manufacturers need effective date extensions for the reasons developed previously. In addition, unlike other appliance categories, warm air furnaces are virtually unregulated in the U.S., there is no voluntary program, and test laboratories have almost no experience with CSA B415.1-10 testing. EPA must also add sell-through provisions to the final rule to avoid stranding inventory—something that could cripple this industry. There is no justification for withholding such relief from warm air furnace manufacturers, particularly where

EPA provided sell-through provisions for woodstoves both back in 1988 and in the proposed rule. Finally, EPA should grandfather whatever limited number of furnaces is listed by accredited laboratories to the CSA B415.1-10 “passing grade.”

III. LEGAL BACKGROUND ON SECTION 111 AND PRECISION ISSUES

Before addressing specific substantive components of EPA’s proposed rule, HPBA here provides an overview of some of the key principles that must guide EPA’s decision-making. Each of these common-sense principles helps ensure that EPA’s underlying science is unassailable, its test methods sound, and its ultimate standards cost-effective and achievable on a reliable and consistent basis. To the extent EPA’s proposed standards do not comport with them, they are incompatible with section 111 and must be revisited.

A. EPA MUST “ADEQUATELY DEMONSTRATE” THAT ITS STANDARDS REFLECT THE “BEST SYSTEM OF EMISSION REDUCTION” (“BSER”).

The CAA requires new source standards of performance to reflect “the degree of emission limitation achievable through the application of the *best system of emission reduction*,” a standard also known in the shorthand as “BSER.”¹ As recognized in the proposed rule preamble, “system” (as used in Section 111(a)(1)) is a broad concept consistent with a variety of means by which required emissions reductions might be achieved – means which “may or may not be ‘technology.’”² Indeed, this is the reason for Congress’s shift away from the prior “BDT”³ concept and terminology to the use of BSER. EPA, thus, is bound to consider all available tools for emission reduction, technological, economic, policy-based, or otherwise, and must determine which or which combination of them represents the “best system.”

In determining what system is “best,” EPA must ensure that its emission standards are “adequately demonstrated.”⁴ While there are many principles that govern the concept of “adequate demonstration,” there are several with particular import to this rulemaking: ***First***, the ***data relied upon in support of EPA’s selected standards should derive from the same test methods*** by which manufacturer compliance will be measured. ***Second***, to the extent EPA intends to rely upon data or technologies outside of the particular category or subcategory of appliances at issue, any such ***technology transfer analysis must be based on a robust demonstration showing that it is supported by the evidence***. ***Third***, EPA must ***account for test method imprecision*** in setting section 111 standards, including through the ***incorporation of appropriate compliance margins***. ***Fourth***, either through sub-categorization or through adoption

¹ 42 U.S.C. § 7411(a)(1) (emphases added).

² 79 Fed. Reg. at 6,334.

³ Prior to the Clean Air Act Amendments of 1990, section 111 new source standards were to reflect the “best *technological* system of continuous emission reduction . . . adequately demonstrated,” a standard that had been referred to as “BDT.” See 42 U.S.C. § 7411(a) (1977) (emphasis added).

⁴ See 42 U.S.C. § 7411(a)(1).

of a sufficient compliance margin, EPA's standards must *account for the full range of fuels used by affected facilities*, including those shown to be "dirtiest." Finally, a standard and the method by which compliance with that standard is determined are indivisible and must be evaluated together when determining BSER.

1. Subpart AAA Standards Should Be Based on Data Derived from the Proposed Reference Methods.

To withstand legal scrutiny, the methods used to establish any Subpart AAA standard should align with those by which compliance will be evaluated – the so-called "reference methods." As the D.C. Circuit has stated, "a significant difference between techniques used by the agency in arriving at standards and requirements presently prescribed for determining compliance with standards, raises serious questions about the validity of the standard."⁵ Indeed, EPA itself has long recognized the importance of ensuring that the "same procedures that were used to obtain the emission data upon which the emission limitations are based are used for compliance testing."⁶

Put simply, a performance standard is more than a number, it is a number married to the reference method that will be used to determine compliance; necessarily, this marriage also must look backwards to the data that are used to set the number, which should be generated with the same test method. Otherwise, the inevitable differences between test methods will hopelessly confound the effort to assure that performance standards define clear and fair lines reflecting BSER.⁷ To the extent the proposed standards are not based on EPA reference methods, EPA must have some reasonable basis for departing from them and must explain and account for any differences between test methods in establishing performance standards.⁸

2. EPA Must Adhere to Limits on Technology Transfer Analysis in Setting Subpart AAA Standards.

While EPA may at times look to technology used outside of the appliance category or specific industry subset under consideration, EPA may not do so where there are relevant differences bearing on the availability, feasibility, efficiency, or costs of the technology, or where other factors logically show that technology transfer is inappropriate. Where EPA bases a standard on a technology transfer argument, it must have robust evidence upon which to justify

⁵ *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 396 (D.C. Cir. 1973).

⁶ 68 Fed. Reg. 1,888, 1,901 (Jan. 14, 2003) (EPA hazardous air pollutant ("HAP") standards for stationary combustion turbines).

⁷ Indeed, courts have long deemed it "undisputed" "that the method of determining compliance with an emission standard can affect the level of performance required by the standard, even though the standard itself has not changed." *Donner Hanna Coke Corp. v. Costle*, 464 F. Supp. 1295, 1304 (W.D.N.Y. 1979).

⁸ *See Portland Cement Ass'n*, 486 F.2d at 397 ("It is incumbent on the Administrator to explain the discrepancy [between the sampling method relied upon and the reference method].").

the extrapolation in question.⁹ If such evidence is lacking, the proposed regulation must be reconsidered and revised as necessary.

3. EPA Must Adequately Account for Test Method Imprecision.

EPA has long been aware of precision issues¹⁰ regarding test methods for residential wood heater emissions. In fact, in promulgating Subpart AAA, EPA frankly and appropriately acknowledged that one precision component – intralab precision – had been taken into account in standard-setting.¹¹ And EPA went further, and expressly *obligated* itself to evaluate interlab precision and account for it by adjusting the stringency of the standards, if necessary, by amending them through a rulemaking proceeding.¹²

EPA has never fulfilled this obligation – one that continues to apply to this day, when EPA is engaging in its first comprehensive re-evaluation of Subpart AAA. Thus, to avoid behaving in an arbitrary and capricious manner, it is critical that EPA finally attend to this important piece of unfinished business and fully address test method imprecision in this rulemaking by both (1)

⁹ See *Natural Res. Def. Council, Inc. v. EPA*, 655 F.2d 318, 331 (D.C. Cir. 1981) (citing *Am. Meat Inst. v. EPA*, 526 F.2d 442, 465 (7th Cir. 1975)) (Courts “expect[] more solid evidence that the technology can be transferred . . . , or at least that relevant dissimilarities have been considered.”); see also *Portland Cement Ass’n*, 486 F.2d at 396 (EPA failed to justify its reliance on data from only dry-process cement plants to support standard also applicable to wet-process plants).

¹⁰ “Precision” is defined as “[t]he closeness of agreement between independent test results obtained under stipulated conditions,” and collectively refers to two specific types of uncertainty: repeatability and reproducibility. See Rick Curkeet and Robert Ferguson, EPA WOOD HEATER TEST METHOD VARIABILITY STUDY: ANALYSIS OF UNCERTAINTY, REPEATABILITY AND REPRODUCIBILITY BASED ON THE EPA ACCREDITED LABORATORY PROFICIENCY TEST DATABASE, at 5 (2010) (hereafter, “Curkeet Ferguson”). Both types of uncertainty are discussed in our detailed comments on EPA’s proposed woodstove standards in Part VI of these comments.

¹¹ See 52 Fed. Reg. 4,994, 5,010 (Feb. 18, 1987) (in proposing current Subpart AAA requirements, EPA expressly recognized that “the intralab precision of the test method and procedure was taken into account in the establishment of the standards.”).

¹² See 53 Fed. Reg. 5,860, 5,878 (Feb. 26, 1988) (promulgating 40 C.F.R. § 60.533(p)(4)(ii)(B)). This provision requires that EPA either (1) amend Subpart AAA based on “the overall precision of the method and procedure, and the interlaboratory component thereof” or (2) determine that “available data are insufficient to determine the overall precision of the method and procedure.” According to the rule preamble, “[i]f the results of the interlaboratory analysis show a value greater than [EPA’s “assumed” level of precision] is appropriate, the interlaboratory component of precision will be used in evaluating audit data” for determining compliance. *Id.* at 5,871. Despite a July 1, 1990 deadline – and despite the long availability of EPA data revealing precision concerns – EPA has never responded to its obligations to address this issue under Subpart AAA. See also *infra* Section VI.

rigorously evaluating test method precision and (2) taking it into account in standard-setting, including incorporating a sufficient compliance margins, as appropriate.

Failure to address and adequately account for test method imprecision is not only counter to EPA's self-imposed requirements under Subpart AAA but also contravenes well-established Clean Air Act precedent. As stated long ago by the D.C. Circuit, "[i]t is up to EPA . . . to support its methodology as reliable, and this requires more than reliance on the unknown, either by speculation, or mere shifting back of the burden of proof."¹³ Thus, where imprecision concerns have been documented, EPA must incorporate into its standards a sufficient compliance margin to account appropriately for measurement variability.¹⁴

In other situations where significant precision concerns have been identified, EPA has affirmatively taken steps to address them by expressly requiring that standards include a sufficient compliance margin. For example, EPA's approach to measuring opacity ("Method 9") requires that "[t]he accuracy of the method . . . be taken into account when determining possible violations of applicable opacity standards."¹⁵ EPA has recognized the necessity of including an adequate compliance margin to address significant test method accuracy/precision issues in other more recent rulemakings as well.¹⁶ As required under Subpart AAA, EPA must take care to rigorously consider and adequately account for test method imprecision in this rulemaking.

4. EPA Must Appropriately Account for Emission Variability Based on Choice of Fuel in Setting Subpart AAA Standards.

Fuel choice is an important factor that must be considered under section 111. Where more than one fuel may be burned by an appliance or appliance category, EPA has two options:

- (1) Issue separate standards applicable to appliances using each fuel, *i.e.*, subcategorize on the basis of fuel choice; or
- (2) Issue a single standard based on combustion of the "dirtiest" fuel.

¹³ *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 645 (D.C. Cir. 1973).

¹⁴ *See Portland Cement Ass'n*, 486 F.2d at 396 (quoting *Int'l Harvester Co.*, 478 F.2d at 647) ("It would . . . seem incumbent on the Administrator to estimate the possible degree of error [inherent] in his prediction.").

¹⁵ 40 C.F.R. Part 60, Appendix A-4; *see also Portland Cement Ass'n*, 486 F.2d at 401 (requiring EPA to consider whether measurements "can be made within reasonable accuracy"); *Essex Chem. Corp.*, 486 F.2d at 432 (same conclusion); *see also Donner Hanna Coke Corp.*, 464 F. Supp. at 1304 (EPA must provide adequate support for the reliability of its opacity methods).

¹⁶ *See, e.g.*, 75 Fed. Reg. 54,970, 54,984 (Sept. 9, 2010) (HAP standards for the Portland cement industry accounted for "measurement imprecision" by incorporating an "ample compliance margin" into EPA's MACT floor calculation, in that case by multiplying the highest reported minimum detection level by a factor of three).

What EPA cannot do is issue a single standard based on combustion of just one fuel, where affected facilities are likely to use other higher-emitting fuels.¹⁷

EPA may generally subcategorize an industry “in any reasonable manner,”¹⁸ and under section 111, EPA is specifically authorized to “distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing [new source performance] standards.”¹⁹ EPA has before subcategorized under section 111 on the basis of fuel choice, and this approach has been recognized and endorsed by the D.C. Circuit.²⁰

In the alternative, EPA may issue a single standard for any category or subcategory of appliances, but it may *only* do so if the standard is consistent with test data based on use of the “dirtiest” fuel that can be expected to be used by the source category. EPA is required to use test data “in a manner which provides some assurance of the achievability of the standard *for the industry as a whole*, given the range of variable factors found relevant to the standards’ achievability.”²¹ Absent verification that Subpart AAA’s standards are achievable for *all* affected facilities – whatever fuel they may burn – there can be no “adequate demonstration” under section 111.

5. The Standard and the Method Used to Determine Compliance with the Standard Must Be Evaluated Together When Determining BSER.

An emissions standard and the method by which compliance with that standard is to be measured are indivisible. Indeed, the D.C. Circuit has long recognized that “changing the method of measuring compliance with an emission limitation can affect the stringency of the limitation itself.”²² Because a compliance algorithm is an integral part of the standard itself, it cannot be changed without a robust evaluation of how such changes could affect the standard. Thus, in determining BSER, EPA must consider whether changes to a compliance algorithm results in emissions limits that are far more stringent such that they are no longer achievable.

¹⁷ See, e.g., *Nat’l Lime Ass’n v. EPA*, 627 F.2d 416, 440-41 (D.C. Cir. 1980) (EPA failed to consider the effect of burning coal in determining and supporting achievability of section 111 standard for lime manufacturing plants).

¹⁸ *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 525 (D.C. Cir. 1983).

¹⁹ 42 U.S.C. § 7411(b)(2).

²⁰ See *Sierra Club v. Costle*, 657 F.2d 298, 319, 362 (D.C. Cir. 1981) (where test data based on use of low-sulfur coal was “insufficient to support the [same] standard” when high-sulfur coal was used, EPA properly exercised discretion to vary standard based on sulfur content).

²¹ *Nat’l Lime Ass’n*, 627 F.2d at 433 (emphasis added).

²² *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1027 (D.C. Cir. 2000) (citing cases).

B. EPA MUST RIGOROUSLY CONSIDER THE COSTS AND ADVERSE ENVIRONMENTAL IMPACTS OF ANY STANDARD CONSIDERED.

Costs are and have always been a fundamental consideration under section 111. EPA has no discretion – per the plain terms of the statute, EPA *must* “tak[e] into account the cost of achieving [a considered level of emission reduction],” along with “any nonair quality health and environmental impact and energy requirements.”²³ This requirement is a fundamental part of the basic architecture of technology-based standards, one of the common tools in environmental statutes. Section 111 is one of several provisions in the CAA that uses this approach to stand-setting. Technology-based standards reflect the common-sense notion that standards should reflect a reasonable integration between what is technologically feasible and the economic and other costs of achieving emission reductions. The basic principle is the same that people everywhere use in making important decisions in their lives: from the spectrum of available choices, which one delivers the most value for the money spent, with the least amount of collateral consequences.

Consistent with this basic theme, section 111 requires EPA to consider “the possible economic impact of the promulgated standards.”²⁴ While formal cost-benefit analysis is not demanded, EPA is required to rigorously consider the costs of any standard to be imposed, including costs that may be “unduly preclusive as to certain qualities, areas, or low-cost supplies” of the source to be regulated.²⁵ The costs of a standard likewise include those costs preclusive of demand, *i.e.*, costs which will unduly raise consumer prices and thereby inhibit the use of new, lower-emitting technologies ostensibly to be promoted by EPA standards. All such costs with respect to EPA’s proposed standards must be rigorously evaluated and considered.

In addition – and in concert with its consideration of economic costs – EPA must also broadly consider the environmental costs of its proposed standards. As recognized in the case law, Section 111’s requirements are not met where a standard will be “exorbitantly costly in an economic or environmental way.”²⁶ Put another way, EPA is required to “take into account counter-productive environmental effects” when determining what level of emission reduction properly qualifies as BSER.²⁷ Thus, *all* of the anticipated environmental impacts of a standard, including adverse air quality impacts must be considered.²⁸

²³ 42 U.S.C. § 7411(a)(1).

²⁴ *Portland Cement Ass’n*, 486 F.2d at 387.

²⁵ *Id.* at 388.

²⁶ *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973) (emphasis added).

²⁷ *Id.* at 438-39.

²⁸ Under the facts in *Essex Chemical*, the relevant environmental costs were water pollution and solid waste impacts associated with EPA’s regulation of emissions from coal-fired steam generators and sulfuric acid plants. *See id.* at 439, 441. The case, however, places no limits on the range of “counter-productive environmental effects” that may require consideration, *id.* at 438-39, and nothing in the years since has changed the broad scope of relevant environmental (Continued...)

IV. COMMENTS ON ADMINISTRATIVE, COMPLIANCE, AND TRANSITION PROVISIONS

EPA has proposed various changes to the administrative, compliance, and transition provisions of 40 C.F.R. Part 60, subpart AAA. Most of those changes also are incorporated by reference into new subpart QQQQ, which would apply to new residential hydronic heaters and forced-air furnaces (also called warm air furnaces). HPBA’s comments regarding the administrative, compliance, and transition provisions proposed in the new rule are organized as follows. In Part IV.A, we address the proposed rule’s scope and application. In Part IV.B, we comment on the proposed certification procedures. Part IV.C addresses the proposed quality assurance/control plan requirements. In Part IV.D, we address the proposed revocation and suspension procedures. In Part IV.E, we comment on the proposed audit testing program as a means of enforcing the rule. In Part IV.F, we comment on the various transitional issues raised by the proposed rule, including EPA’s proposals to allow grandfathered woodstove and pellet stove models (but not models in other appliance categories) to continue to be manufactured and sold under certain conditions. Finally, in Part IV.G, we comment on EPA’s proposed delegation of certain provisions of the proposed rule to the States. Again, unless otherwise noted, HPBA’s comments below apply with equal force to Subparts AAA and QQQQ.

A. EPA NEEDS TO FURTHER CLARIFY THE SCOPE AND APPLICABILITY OF THE PROPOSED RULE

Proposed § 60.530,²⁹ which governs the scope and application of the revised Subpart AAA, specifies that the rule applies to operators, manufacturers, sellers, those who offer for sale, import for sale, distribute, offer to distribute, introduce, or deliver for introduction, into commerce in the United States affected wood heaters specified in paragraphs § 60.530 (a)(1) or (a)(2). The proposed rule exempts certain appliances from portions of the proposed rule, namely, the applicable emission limits of § 60.532 and from the compliance and certification requirements of § 60.533, including wood heaters manufactured for export, wood heaters used only for research and development purposes, appliances that do not burn wood or wood pellets,

impacts. Indeed, in amending section 111(a) to add specific reference to “nonair quality health and environmental impacts,” Congress did not narrow or otherwise change the scope of environmental costs relevant to the EPA’s decision-making; Congress meant only to provide illustrative clarification, to “make[] explicit what was implicit in the previous language.” H.R. Rep. No. 95-294, at 190 (1977); *see also id.* at 187 (deeming it necessary “to recognize expressly that, in addition to cost, energy factors *and other environmental impacts* are to be considered by the administrator” (emphasis added)); *see also, e.g., Portland Cement Ass’n v. EPA*, 665 F.3d 177, 183, 191 (D.C. Cir. 2011) (characterizing the statute as broadly requiring EPA to take into account “health, environmental, and energy considerations”). All environmental costs – including additional air-quality impacts not addressed by an emissions standard – continue to require EPA’s attention.

²⁹ All of the references to the Code of Federal Regulations in these comments refer to EPA’s changes to those regulations in the proposed rule, 79 Fed. Reg. 6330 (Feb. 3, 2014), unless otherwise specified.

cook stoves and camp stoves, as those appliances are defined in the proposed rule.³⁰ Oddly, the proposed rule does not define what constitutes a “fireplace,” a major category of appliances that EPA intends to continue to exempt under the proposed rule (as it did in 1988).

Prior to EPA’s publication of the proposed rule, HPBA provided EPA with a comprehensive set of definitions to better refine the rule’s scope.³¹ Those definitions reflected the work of group of industry experts who HPBA brought together to address these issues, with the goal of assisting EPA in building a solid foundation for the revised NSPS. However, those definitions were not incorporated into the proposed rule and EPA has not provided an explanation for its decision not to propose them. Most significantly, EPA’s failure to adopt HPBA’s proposed definition for what constitutes a “fireplace” leaves a glaring hole in the regulatory scheme. In crafting a clear and workable rule, it is important to draw a bright line of distinction between those appliances that are covered by the rule and those that are not. EPA’s regulatory definitions provide necessary guidance to the regulated public and industry.³² Although the preamble repeatedly refers to EPA’s decision to exclude fireplaces in the proposed NSPS (as they were excluded from the current 1988 NSPS), nowhere does EPA define what constitutes a fireplace, beyond explaining that fireplaces are typically not designed as heaters because most of the heat content is lost out of the chimney with the relatively large amounts of combustion air rather than heating the room.³³

To better differentiate fireplaces from heaters, and to more clearly define what appliances are excluded from the proposed rule, HPBA again urges EPA to include the following definition of “fireplaces” within § 60.531:

(1)(a) A fireplace is a wood-burning appliance intended to be used primarily for aesthetic enjoyment and not as a room heater. A fireplace is not an affected facility. An appliance is a fireplace if it is in a model line that satisfies the requirements in subsections (b), (c), (d) or (e).

³⁰ In addition, residential hydronic heaters, residential masonry heaters, appliances that are not residential heating devices like site-built masonry fireplaces, and traditional Native American bake ovens are not subject to subpart AAA and are instead regulated in new subparts QQQQ and RRRR. Most of those appliances are defined in § 60.531, although some relevant definitions are located in §§ 60.5473 of subpart QQQQ and 60.5485 of subpart RRRR. EPA also “tighten[ed]” the definition for “cook stoves” and added definitions for “camp stoves” and “traditional Native American bake ovens” to clarify that they are not subject to the standard except the appropriate labeling requirements for cook stoves and camp stoves.

³¹ See Robert W. Ferguson, NSPS FIREPLACE APPLICABILITY/DEFINITION PROPOSAL AND SUPPORTING DOCUMENTS (June 6, 2011) [EPA-HQ-OAR-2009-0734-0271].

³² See §§ 60.531, 60.5473, and 60.5485.

³³ See 79 Fed. Reg. at 6335, 6336, 6338, 6353, 6354.

(b) The model line is qualified under the EPA Wood-burning fireplace program, or, if that program has been terminated, was qualified at the time of termination,

(c) The model line includes a safety listing under recognized American or Canadian safety standards, as documented by a permanent label from a nationally recognized certification body affixed on each unit sold, and that said safety listing only allows operation of the fireplace with doors fully open. Operation with any required safety screen satisfies this requirement.

(d) (1) The model line has a safety listing that allows operation with doors closed, has no user-operated controls other than flue or outside air dampers that can only be adjusted to either a fully closed or fully opened position, and the requirements in either (d)(2) or (d)(3) are satisfied.

(d)(2) Appliances are sold with tempered glass panel doors only (either as standard or optional equipment), or;

(d)(3) The fire viewing area is equal to or greater than 500 square inches.

(e)(1) A model line that is clearly positioned in the marketplace as intended to be used primarily for aesthetic enjoyment and not as a room heater, as demonstrated by product literature (including owner's manuals), advertising targeted at the trade or public (including web-based promotional materials), or training materials is presumptively a fireplace model line.

(e)(2) The presumption in subsection (e)(1) can only be rebutted by test data from a test laboratory accredited by a nationally recognized accreditation body, that were generated in substantial reliance on ASTM E2558 when operating the appliance with the door(s) closed, and that demonstrate an average stack gas carbon dioxide (CO₂) concentration over the duration of the test run equal to or less than 5.00% and a ratio of the average stack gas CO₂ to the average stack gas carbon monoxide (CO) equal to or greater than 15:1. The stack gas average CO₂ and CO concentrations for the test run shall be determined in accordance with the requirements in CSA B415.1-2010, clause 6.3 using a sampling interval no greater than one minute. The average stack gas CO₂ and CO concentrations for purposes of this applicability determination shall be the average of the stack gas concentrations from all sampling intervals over the full test run.

EPA also should give further consideration to the other definitions that HPBA previously proposed.³⁴ It is true that definitions for regulated appliance categories are somewhat less

³⁴ See David Menotti & Robert W. Ferguson, NSPS REGULATED PRODUCT APPLICABILITY /DEFINITION PROPOSAL (June 6, 2011) [EPA-HQ-OAR-2009-0734-0274]; David Menotti & (Continued...)

important than definitions for excluded appliance categories because the test and certification laboratories will perform a type of policing function by ensuring that regulated appliances get tested and certified in their proper categories. Nevertheless, the revised NSPS would still be better served if the broader definitional scheme proposed by HPBA was incorporated.

EPA should also refine its definition of “residential hydronic heater” in Subpart QQQQ. Proposed § 60.5472 clearly indicates that proposed Subpart QQQQ will only govern “residential hydronic heaters.”³⁵ But, EPA has proposed a definition of “residential hydronic heater” that does not sufficiently differentiate residential models from commercial ones. EPA should revise the definition to include a maximum heat output rating cutoff consistent with that found in the NESCAUM model rule and the Phase 2 Voluntary Program Partnership Agreement. Specifically, the NESCAUM model rule defines “residential-size heater” as one “with a rated thermal output of 350,000 Btu/hr or less[.]”³⁶ Likewise, the Phase 2 Partnership Agreement defines “commercial models” as those “that generate 350,000 Btu/hr heat output or more.”³⁷ By including this cutoff in the definition of “residential hydronic heater,” EPA will provide much needed clarity to regulated manufacturers.

B. EPA’S PROPOSED CERTIFICATION PROVISIONS ARE NEEDLESSLY DUPLICATIVE AND RESTRICTIVE

Rather than retaining the authority to issue certificates of compliance, EPA should rely on independent third party certifying entities to perform all certification functions, with EPA playing a limited oversight role. Independent third party certification systems have been successfully implemented in a variety of health and safety regulatory regimes where important societal interests are at stake. Such systems are proven, reliable, and cost-effective, and thus, EPA should not duplicate first-tier certification functions that third party certifying entities are better suited to perform. In addition to being unnecessary to support the program generally, the proposed certification provisions will build huge delays into the certification process, which will add costs and could be crippling to the industry in the early phases of the new program absent very significant attention to transition relief (*e.g.*, grandfathering/extension of effective dates). In addition, EPA should delete the provision (proposed § 60.538(i)) prohibiting certifying entities from certifying their own certification test reports. Such a prohibition is contrary to ISO/IEC 17046, unduly restrictive, and unjustified.

1. Overview of EPA’s Proposal

Under the proposed rule, a manufacturer must obtain a certificate of compliance from EPA. To do so, the manufacturer must first: (i) contract with a certifying entity for certification

Robert W. Ferguson, NSPS UTILITY HEATER APPLICABILITY/DEFINITION PROPOSAL (Aug. 10, 2011) [EPA-HQ-OAR-2009-0734-0275].

³⁵ See 79 Fed. Reg. at 6,384.

³⁶ NESCAUM Model Rule (Docket ID: EPA-HQ-OAR-2009-0734-0185), at 3.

³⁷ Phase 2 Partnership Agreement (Docket ID: EPA-HQ-OAR-2009-0734-0100), at 3.

services; (ii) submit all of the materials specified in proposed § 60.533(b), along with a quality assurance/control plan, to the certifying entity; (iii) obtain a certificate of conformity with the applicable emission standards from the certifying entity; and (iv) request the certifying entity to electronically submit all relevant data and information (including documentation relating to testing by an accredited laboratory) to EPA. EPA can issue a certificate of compliance only after reviewing “*all of the information submitted in the application for certification and any other relevant information*” and determining that various requirements have been satisfied.

The proposed rule thus envisions that two types of laboratories will participate in the new testing and certification scheme: (i) test laboratories that are accredited by a nationally recognized accrediting entity under ISO-IEC Standard 17025³⁸ to perform testing using approved test methods and approved by EPA to conduct such testing; and (ii) independent third party certifying entities that have been accredited by a nationally recognized accrediting entity under ISO-IEC Guide 17065 and approved by EPA for conducting certifications, inspections, and audits.³⁹ Nevertheless, EPA has retained the authority to issue each and every certification of compliance.

2. Independent Third Party Certifying Entities Should Issue Certificates of Compliance Subject to Limited EPA Oversight

EPA’s proposal incorporates aspects of an independent third party certification system, but EPA nevertheless retains the ultimate authority to issue certificates of compliance. Such an approach is senseless and redundant, and it will add unnecessary time and expense to the certification process. Of particular importance, EPA’s proposed certification approach could bring the industry to a standstill at the outset of the program absent comprehensive grandfathering/transition provisions and, perhaps extensions of effective dates. Requiring EPA review and approval of *every* application for a certificate of compliance would undo the benefits of relying on independent third party certifying entities. EPA has not articulated why it cannot rely on independent third parties to issue certificates of compliance, particularly where independent third party certification systems have been successfully built into a number of regulatory frameworks, including those governing safety standards for hearth appliances under state and local law, as discussed further below.

a. Independent Third Parties Are Better Suited to Issue Certificates of Compliance

Independent third party certifying entities are in a superior position to review relevant data and information and make individual certification decisions. These entities have more resources and data-handling infrastructure to commit to administering the certification program than EPA—a consideration that is particularly important in today’s fiscal environment. Third parties can conduct the certification process efficiently without sacrificing quality. They can also more

³⁸ Proposed § 60.535 does, however, provide that laboratories accredited by EPA under the existing Subpart AAA regulations by February 3, 2014, may continue to be accredited until one year after the effective date of the final rule.

³⁹ See §§ 60.531, 60.535.

easily absorb the influx of new applications that is certain to result from the establishment of standards for new wood heating appliance categories. EPA's administration of the wood heater program to date has suffered from inadequate staffing and data-handling and data-submission infrastructure. Adding additional appliance categories would further strain the Agency's limited resources by forcing personnel to process even more applications and to familiarize themselves with new appliances.⁴⁰

As noted above, many independent third party certifying entities are already experts in the wood heater industry based on their experience certifying safety standards pursuant to state and local law. These entities also have extensive experience performing testing functions for the wood heater industry under the existing Subpart AAA. As a result, personnel employed by independent third party certifying entities are highly familiar with the types of appliances that they will be dealing with under the proposed rule.

b. Independent Third Parties Have Strong Incentives to Issue Certifications Reliably and Effectively and to Ensure Ongoing Compliance

Independent third party certifying entities have significant incentives to administer the certification system faithfully and accurately. These entities' reputations and, therefore, their business depend on the performance of the manufacturers whose appliances they certify. It is in the certifying entity's best interest to ensure that every time it authorizes a manufacturer to use its certification mark, it is fully confident that the appliance design will meet the applicable standards and that the manufacturer's quality assurance/control plan is sufficiently rigorous. Additionally, if certifying entities perform subpar work or issue authorizations for certification marks when unwarranted, they risk losing their accreditation. In a nutshell, third party certifying entities are in the business of selling promises, and it is integral to their long term success to ensure those promises will be kept. That inherent accountability ought to alleviate any fears that the public, EPA, or any stakeholders may have about a non-governmental entity performing certification functions.

Independent third party certifying entities also have strong incentives to conduct rigorous follow-up inspections of the manufacturers they certify—which they must do at least quarterly under proposed § 60.533(m)(iv)—to ensure that manufacturers are implementing their quality assurance/control plans.⁴¹ Because EPA residually retains enforcement authority (including the authority to revoke certifications), certifying bodies have every incentive to ensure that they

⁴⁰ To be sure, EPA's Office of Enforcement and Compliance Assurance ("OCEA") is addressing the data issues with electronic submissions, but any efficiencies gained from those efforts will be dwarfed by the increased burdens on the Agency from the proposed rule. In fact, HPBA's certified laboratory members report that they already are experiencing delays at OCEA averaging anywhere from four to six *months*, up significantly from the four-to-six *week* turn-around time that they experienced just two years ago. This is a very disturbing situation, with ramifications both currently and for implementation of the revised standards.

⁴¹ The following section of these comments (Part IV.3) discusses the proposed quality assurance/control plan requirements in more detail.

adequately inspect and address non-compliance. It is, however, unlikely that EPA will need to resort to its residual enforcement capabilities frequently. This is because certifying entities have an established record of uncovering non-compliant products and quality assurance/control and record-keeping practices in the course of their inspections. And given their familiarity with wood heating appliances, they are more than capable of recognizing non-compliant units and other potential violations. Importantly, the scope of components that certifying entities currently inspect under state and local safety standards is identical (or nearly so) to those that they must inspect to ensure compliance with emission standards.

c. Independent Third Party Certification Systems Have Been Successfully Implemented in Many Contexts

Independent third party certification systems have proven to be an effective and reliable way for regulatory agencies to outsource certain responsibilities. Many existing regulatory programs have successfully incorporated independent third party certification requirements:

- Wood heater safety standards: The vast majority of state and local governments require that wood heater appliances meet safety standards. Generally, state and local governments do not create their own wood heater safety standards. Rather, they adopt voluntary consensus standards codes that were created by international or national standard-setting bodies.⁴² These bodies set wood heater safety standards by convening a balanced panel of stakeholders that usually includes manufacturers, consumers, public safety officials, and others. The consensus safety standards that emerge from this process are typically incorporated into state and local building codes, which in turn require wood heater appliances to obtain third-party certification with the safety standards. Although not all state and local jurisdictions have adopted safety standards for wood heaters, nearly all appliances sold in the U.S. obtain certification with the standards because they are not fungible on the market otherwise. Safety standards for wood heaters serve a very important regulatory function in the U.S. The consequences of non-compliance can include serious injury, fatality, and significant property destruction. Clearly, state and local governments are comfortable entrusting independent third parties with the significant responsibilities of certifying designs as consistent with the standards and ensuring continued compliance through inspections. Therefore, it makes sense to use an independent third party certification system within the same industry to address an important public health issue; such a system has already proven successful in another regulatory context where failure is unacceptable. Further, as noted above, all stakeholders will benefit from synergies created through certification and inspection under both the revised NSPS and safety standards because of the significant overlap in safety-critical and emissions-critical components.
- FDA Regulation of Foreign Food Facilities: In the food safety context, FDA is currently in the process of implementing an independent third party certification system for

⁴² Examples of such bodies include the American Society for Testing and Materials (“ASTM”), the American National Standards Institute (“ANSI”), and Underwriters Laboratories (“UL”).

overseas food facilities. The purpose of the program is to ensure that foreign food facilities that export food products to the U.S. comply with FDA's food safety regulations. The Food Safety Modernization Act, signed into law in early 2011, mandates that FDA create an overseas independent third party certification system over the next several years.⁴³ FDA is currently creating regulations to implement the overseas system. This development represents a federal agency delegating an important regulatory function to third party certifying entities. Like wood heater appliance safety standards, food safety standards serve an important public health purpose: to prevent and mitigate food-borne illnesses. Food-borne illnesses are a highly visible public health issues: each year they cause 48 million Americans to get sick, 128,000 to visit the hospital, and 3,000 to die.⁴⁴ If a federal agency entrusts third parties with significant responsibilities under this integral new program, it is logical for EPA to do so in the revised NSPS.

- Energy Star: EPA is also familiar with the benefits and reliability of independent third party certification through its joint administration of the Energy Star program with DOE. Energy Star is a voluntary energy efficiency program that applies to household appliances and products. For most of its existence the program was self-administered by the participants, meaning product manufacturers certified that their own products met energy efficiency claims. However, a damning report issued by the Government Accountability Office in 2010 revealed that many manufacturers had not been truthful regarding their products' energy efficiency claims. Following the release of this report, DOE and EPA realized that they needed to build more accountability into the Energy Star program. Because Energy Star is a voluntary program, the agencies needed a reliable and efficient means of ensuring validity that did not require public funding. In 2011, the agencies implemented an independent third party certification system that all Energy Star products must undergo to use the program's mark. Although a voluntary program, Energy Star seeks to address an important policy issue—energy efficiency—and to help customers make informed decisions about the energy use implications of the products they buy. It is yet another example of independent third party certification being successfully employed in an important program.

Given these successes, EPA should rely fully on independent third party certifying entities to issue certificates of compliance with NSPS. EPA has not articulated why it is necessary for it to retain authority to issue all certificates of compliance. This is not surprising given that there is nothing unique about the NSPS program that would require EPA to retain that authority.

d. EPA Can and Should Retain an Oversight Function

Rather than issue every certificate of compliance, EPA should focus its limited resources on conducting oversight of certifying entities. First, EPA can conduct periodic audits of certifying entities' performance. This would avoid duplicating first-tier certification functions that

⁴³ See generally Title III, P.L. 111-353; 21 U.S.C. §§ 381 *et seq.*

⁴⁴ See <http://www.fda.gov/Food/FoodSafety/FSMA/ucm257980.htm>

independent third parties are better suited to handle.⁴⁵ Second, rather than requiring certifying entities to send *all* materials relating to an application for a certificate of compliance to EPA, certifying entities should instead only be required to provide EPA (or an accrediting body) with access to inspect any supporting documentation upon request. Under that approach, EPA would not have to maintain large databases containing manufacturers' confidential business information and other detailed documentation, but could easily obtain the necessary information upon request in the context of an audit, a much more sensible option than storing such information. Third, EPA can investigate any suspected non-compliance issues, and certifying entities would be obligated to comply and respond to such requests to investigate. Finally, EPA can review quality assurance/control audit reports issued by accrediting bodies. By exercising a more limited oversight role, the independent third party certification system for the wood heater NSPS program would be more in line with existing systems implemented under other regulatory programs. This would eliminate redundancy and unnecessary delay and costs. It would also help to ensure a smoother transition during the early phases of the new program, rather than forcing manufacturers to effectively freeze their business as they scramble to try to get through the bottleneck of certification decisions that EPA would have to make under the current proposal.

3. EPA Should Not Prohibit Certifying Entities from Certifying Their Own Test Reports

Under proposed § 60.538(i), “[n]o certifying entity is permitted to certify its own certification test report.” This prohibition conflicts with ISO/IEC 17065, which plainly contemplates that a certification entity can perform evaluation (testing) activities “either with its internal resources or with other resources under its direct control.” EPA also appears to overlook the requirement under ISO/IEC 17065 that certifying entities maintain technical competence in areas where they provide certification services. Certifying entities meet that requirement by,

⁴⁵ It is clear EPA reviews are adding cost and delay to the system, but little else. This is because the test laboratories are doing high quality, competent work. As the data provided by HPBA members Myren Consulting, Inc. and OMNI-Test Laboratories, Inc. (“OMNI”) demonstrates, EPA’s ultimate certification decisions have almost always resulted in weighted average certification scores that are essentially identical to the results provided by the independent test laboratories. For example, since 1996, Myren Consulting, Inc. has submitted a total of 43 woodstove certification test results to EPA, all of which were accepted and the stoves were certified by EPA. The weighted average PM emission rate in the Myren Consulting test reports is the same or virtually the certification value approved by EPA. *See* Myren Consulting, Inc., “Comparison of Myren Consulting, Inc. EPA Test Report Weighted Averages with EPA Certification Values” (Apr. 1, 2014) (Attachment 5 to these comments). OMNI’s data show the same results. Of the random sample of the more than 200 appliances tested by OMNI and certified by EPA, there is an extremely close matchup between the OMNI reported average emission rate and the EPA certified emission rate and there was almost never a variance between the two. *See* OMNI-Test Laboratories, Inc., “Comparison of OMNI-Test Laboratories, Inc. EPA Test Report Weighted Averages with EPA Certification Values” (Apr. 21, 2014) (Attachment 6 to these comments).

among other things, operating their own testing facilities.⁴⁶ Finally, ISO/IEC 17065 also requires that certifying entities rigorously oversee the evaluation/testing process. Often, the most efficient way to do this is by conducting evaluations in their own laboratories.

EPA has not justified its proposal to prohibit certifying entities from certifying their own test reports. If EPA is concerned with possible conflicts of interest, ISO/IEC 17065-7.6.2 adequately addresses that by requiring that certification decisions be made by personnel who are not involved in the testing process. In any event, as explained above, certifying entities have a strong incentive to protect their reputations to conduct and oversee the certification process faithfully and accurately.

Rather than prohibiting certifying entities from certifying their own test reports, the final rule should instead expressly give laboratories the choice to pursue both qualifications, or to choose just one role: accredited test laboratory or certifying entity.⁴⁷

⁴⁶ We acknowledge that, under the proposed rule, a certifying laboratory could also be a testing laboratory, but it would be barred from performing both functions for a particular model. Although a laboratory could trade off those roles, performing testing for one model while certifying another, limiting their functions for a particular model is unnecessarily complex, costly and time consuming.

⁴⁷ In its proposed changes to § 60.533(n)(4)(iii), EPA refers to the requirement that a revocation notice must include a copy of a preliminary test report from “the accredited test laboratory *or federal test laboratory*.” Although an “accredited test laboratory” is a term of art defined in § 60.530, the reference to “federal test laboratory” in § 60.533(n)(4)(iii) is not defined and does not appear anywhere else in the proposed rule. That reference should be deleted. Accredited test laboratories are accredited for certification testing under § 60.535. There is not an additional category of laboratory that is authorized to perform testing.

The definition of “accredited test laboratories” in § 60.531 also needs to be clarified. “Accredited test laboratory” is defined to mean “a test laboratory that is accredited for wood heater certification testing under § 60.535 or is an independent third-party test laboratory that is accredited by a nationally recognized accrediting entity under ISO-IEC Standard 17025 to perform testing using the test methods specified in § 60.534 and approved by the EPA for conducting testing under this subpart.” § 60.531. It is not clear from that definition that the rule requires that, to obtain accreditation from EPA for wood heater certification testing under § 60.535, a test laboratory must first be accredited by an independent third-party test laboratory that is accredited by a nationally recognized accrediting entity under ISO-IEC Standard 17025. See § 60.535(a)(1) (“A laboratory must apply to the Administrator for accreditation as an EPA accredited test laboratory by submitting documentation that the laboratory is accredited by a nationally recognized accrediting entity under ISO-IEC Standard 17025 to perform testing using the methods specified under § 60.534”). As the definition is currently drafted, by including a reference to ISO accreditation in only part of the definition of an accredited test laboratory, the proposed rule appears to suggest (erroneously) that such accreditation is not necessary to obtain wood heater certification under § 60.535. Moreover, because EPA proposes to allow laboratories accredited by the EPA by February 3, 2014, under the current NSPS in effect prior (Continued...)

4. EPA Should Clarify the Prohibition on Laboratories Performing Initial Certification Tests on Any Models for Which It Has Conducted Research and Development Testing Within the Last Five Years

Laboratories seeking accreditation under proposed § 60.535(a)(2)(vii) must agree to not perform initial certification tests on any models manufactured by a manufacturer for which that laboratory has conducted research and development tests within the last five years. EPA must clarify what constitutes research and development testing, as that term is neither defined in the rule nor discussed in detail in the preamble. Conducting research and development testing for manufacturers that lack adequate testing facilities is an important source of laboratory revenue, and it is vital to some manufacturers' ability to evaluate their designs. Laboratories can, and do, conduct such testing without playing any role in product design. Under those circumstances, there should be no prohibition on the laboratories' ability to also provide certification testing if the manufacturers request it. EPA should thus revise the proposed accreditation procedures to prohibit laboratories from performing initial certification tests on models for which it has provided *design services* (as opposed to merely research and development testing) to the manufacturer within the last five years.⁴⁸

5. EPA Should Remove the Requirement for Test Laboratories to Seal Tested Appliances

Proposed § 50.535(d) retains the requirement that an accredited test laboratory seal any wood heater upon which it performs certification tests by using a laboratory-specific seal. HPBA continues to believe that this requirement is wholly unnecessary and imposes needless expense on labs. When EPA originally proposed the sealing requirement in 1987, it stated that “[s]ealing is necessary to resolve any possible disputes regarding either the precise dimensions and tolerances of the tested unit or its actual emissions characteristics.”⁴⁹ In the preamble to the final rule (in 1988), EPA proffered a slightly different justification: “The EPA requires that the stove be sealed immediately after completion of certification testing to ensure that the stove will be available for testing if a problem with the model line surface later. No additional testing will

to that date may continue to be accredited until 1 year after the effective date of the prior rule, at which time the accreditation ends unless the laboratory as obtained certified under the revised § 60.535, the definition of “accredited test laboratories” must include those grandfathered laboratories.

⁴⁸ EPA should also expand the proposed grandfathering provision for laboratory accreditation in § 60.535(c)(2). The proposed rule would allow laboratories accredited by EPA by February 3, 2014, under the existing regulations to continue to be accredited until one year after the effective date of the final rule, by which time those grandfathered laboratories must have obtained accreditation under the provisions of the new rule. This is an insufficient amount of time to apply for accreditation under the new rule. It also risks creating a logjam at EPA, which will need time to review and approve applications for accreditation.

⁴⁹ 52 Fed. Reg. at 5,013.

be allowed in order to ensure that the stove can be retested in the same condition as the original certification test.”⁵⁰ Neither of these justifications holds up.

To the extent EPA suggests that the sealing requirement serves as a check on the accuracy of design drawings and specifications (submitted under § 60.533(b)(2)), that explanation makes no sense. The design drawings that manufacturers submit to EPA are themselves the foundation for the quality assurance/control program, *not* the actual appliance upon which certification testing is performed. The design drawings form the basis upon which recertification decisions are made (*see* § 60.533(k)) for the model line. As for EPA’s insistence that a stove must be retested in the same condition as the original certification test, that explanation rests on a fundamentally flawed assumption that emissions retesting is a reliable quality assurance/control tool. As explained in detail below, the poor precision of the proposed test methods proves that it is not a reliable or effective quality assurance/control tool, and thus, it matters little whether a stove can be retested in precisely the same condition as the original certification test. For these reasons, the sealing requirement should be removed from the proposed rule.

6. There Is No Rational Justification for Requiring 30 Days (or More) Advance Notification of Certification Testing

Proposed § 60.534(f) requires that the manufacturer of an affected wood heater must notify the Administrator of the date that certification testing is scheduled to begin at least 30 prior to the start of testing. EPA took the sensible position that it could waive this requirement for most of the more than twenty year history of the Subpart AAA program, and only recently has reversed itself, claiming inexplicably that it lacks authority to do so. Among the reasons that EPA issued waivers in the past was the practical reality that EPA lacked a sufficient travel budget to allow it to utilize its option to oversee tests in all but a very limited number of cases. With current and likely further federal budgets, that problem will, if anything, intensify. EPA needs to return to its time honored earlier position and expressly authorize waivers in the final regulation. HPBA strongly opposes EPA’s proposal to codify the current, flawed position that EPA lack’s authority to waive this notice requirement. Without a waiver provision, valuable laboratory time will be underutilized or unused, and that will have significant financial impacts for both laboratories and manufacturers. More importantly, this will add significantly to the “logjam” problems.

7. Requiring Manufacturers That Choose Not To Seek Recertification To Send Notice To EPA Unnecessarily Generates Costly Paperwork.

In § 60.533(i), the proposed rule provides that the certificate must be recertified or renewed every 5 years or the manufacturer may choose to no longer manufacture or sell that model.⁵¹ If the manufacturer chooses to no longer manufacture or sell the model, then the manufacturer would be required to submit a statement to EPA for that model. We do not understand why that requirement is necessary. If the certificate expires, then it is no longer valid and there should be no need to notify EPA of the fact. That requirement does nothing more than generate unnecessary paperwork and expense. Because this requirement would not be realized until more

⁵⁰ *See* 53 Fed. Reg. at 5,870.

than three years after the final rules becomes effective, EPA was not required to certify the burden imposed by that collection under the Paperwork Reduction Act and we have not included it in our comments to OMB. However, like the provisions that are unnecessary and unduly costly under that Act, the expenses imposed by this provision would not be necessary to administer or enforce the NSPS.

C. HPBA GENERALLY SUPPORTS EPA'S PROPOSAL TO RELY PRIMARILY ON INDEPENDENT THIRD PARTY CERTIFYING ENTITIES FOR QUALITY ASSURANCE/CONTROL, BUT SOME ASPECTS OF EPA'S PROPOSAL REQUIRE REVISION

Under the proposed rule, manufacturers must prepare and operate according to a quality assurance/control plan for each certified model line. Each plan must include inspection and testing requirements to ensure that individual units within a model line accurately reflect emission-critical components of the model line design and meet applicable emission standards.⁵² For grandfathered woodstove and pellet stove models, each manufacturer has 60 days from the effective date of the rule to submit a quality assurance/control plan to EPA for approval. For a new model, a manufacturer must first submit a quality assurance/control plan to a certifying entity, which will have 30 days to approve the plan. Within 30 days of approval by the certifying entity, the plan must also be submitted to EPA for review and approval, but no time frame is specified for EPA's approval. After EPA has approved a plan, the certifying entity must conduct quarterly unannounced audits under ISO-IEC Guide 17065 and ISO-EC Standard 17020 to ensure implementation of the quality assurance/control plan. The certifying entity must submit inspection reports to EPA identifying deviations from the manufacturer's quality assurance/control plan and specifying corrective actions that the manufacturer must undertake. The manufacturer must, in turn, report to EPA and the certifying entity regarding its responses to any deficiencies identified in a given inspection report.

Generally, the proposed quality assurance/control plan provisions are superior to requirements set forth in the existing Subpart AAA regulations. In particular, the existing regulations rely far too heavily on emissions testing as a quality assurance/control tool. Such reliance is misplaced now that we know how poor the precision of the relevant test methods is.⁵³ EPA's reliance on independent third party certifying entities to regularly audit manufacturers'

⁵² EPA is retaining the model line certification scheme, but it seeks comments on whether to require testing of more than one representative appliance within a model line prior to certification of the model line. *See* 79 Fed. Reg. at 6,332, 6,340. HPBA strongly opposes that suggestion, as there is no basis for EPA to require testing of more than one unit. If EPA is concerned with whether manufacturers are, in fact, producing clones of the representative unit that have identical emissions-critical components as the tested unit, the quality assurance/control component of the independent third party certification system is the best way to achieve that. Testing of more than one unit within a model line would be unduly costly for manufacturers, particularly given the relative lack of precision in the applicable test methods. EPA should thus retain the language in the proposed rule that requires testing of only one representative unit prior to certification of a model line.

⁵³ *See* Part IV.E of these comments.

operations and ensure that each individual appliance accurately reflects emission-critical components of the model line design—and its requirement that manufacturers take corrective action in response to any deficiencies identified in certifying entities’ audit reports—is a far better way to conduct quality assurance/control than audit emissions testing under the existing rule.

There are, however, important issues that EPA needs to address in the proposed quality assurance/control provisions:

First, and most importantly, EPA should rely on certifying entities for final approvals of manufacturers’ quality assurance/control plans, rather than having to review and approve each and every plan itself. As discussed above, certifying entities have ample experience with such quality assurance/control plans and thus, requiring EPA review and approval would be needlessly redundant. Moreover, it will create the potential—or perhaps even likelihood given EPA’s budget cuts and anticipated attrition—for a bottleneck where numerous plans are stalled before the Agency awaiting approval. In essence, if a laboratory has been accredited by a nationally recognized accrediting entity *and* approved by EPA to serve as a certifying entity, there is absolutely no need EPA to retrace that laboratory’s steps in approving a quality assurance/control plan. Instead, as in the case of the certification function, EPA should use its scarce resources selectively, by serving in an audit and oversight role here, reserving the authority to require modifications to quality assurance/control plans that it determines are deficient in material respects.

Second, EPA has proposed to delete the quality assurance provisions that currently appear in § 60.533(o) and replace them with revised quality assurance plan requirements set forth in § 60.533(m) of the proposed rule. However, several references to § 60.533(o) remain in the proposed rule. They should be replaced with references to § 60.533(m). *See* § 60.536(a)(5)(ii), (iii); § 60.537(a)(4).⁵⁴

Third, while EPA has proposed to eliminate the automatic emissions testing triggers currently found at 40 C.F.R. § 60.533(o)(3)(i) – a decision which HPBA supports – the proposed rule still would require emissions retesting under quality assurance/control plans, but would do so in some other, currently unspecified way. Specifically, the proposed rule proposes that each manufacturer’s quality assurance plan must include “specific inspection *and testing* requirements for ensuring that units within a model line accurately reflect emission-critical components of the model line design and meet the emissions standards” *See* Proposed 40 C.F.R. § 60.533(m)(1)(i) (emphasis added). The proposed rule preamble has further requested comment on “the exact event(s) that should be used as the trigger(s) to retest and whether the triggering event(s) should vary by appliance type.” 79 Fed. Reg. at 6,366. The requirements for using emissions testing as a quality assurance/control tool need to be abandoned. As fully discussed in Part IV.E below, emissions testing, whether within a quality assurance/control context or under EPA’s proposed compliance audit framework, is a hopelessly blunt tool for ensuring a manufacturer’s ongoing compliance with its obligations to manufacture units within a model line

⁵⁴ In addition, other changes should be made to the provisions relating to transition to the new quality assurance/control scheme. *See* Part IV.F, *infra*.

that are effectively “clones” of the certified design, given the fully demonstrated uncertainties and measurement imprecision associated with wood heater testing.⁵⁵ By contrast, the other components of EPA’s proposed quality assurance/control framework provide ample tools that are more than adequate for ensuring consistency across the emission-critical components of a model line and for identifying and addressing any potential quality control issues.

D. EPA HAS NOT JUSTIFIED THE NEW REVOCATION AND SUSPENSION PROCEDURES

EPA has made several proposed changes designed to streamline the revocation and suspension procedures in Subpart AAA, and the revised procedures would also govern Subpart QQQQ. First, EPA proposes to delete the final provision in § 60.533(n) that currently provides that “Any withdrawal of a proposed revocation shall be accompanied by a document setting forth its basis.” EPA has not explained why that provision has been deleted. When an agency reverses course as EPA has done, it must provide a reasoned explanation of the change.⁵⁶ We also oppose deleting this provision because it leaves a gap in the administrative record, which would contain a revocation notice but no written finding that such notice has been withdrawn, stating the reasons for that withdrawal. This proposed change also denies the manufacturer the assurance of a written finding needed to close the revocation process and to give the manufacturer something tangible upon which it may rely in continuing to manufacture the relevant model line.

EPA also proposes replacing the current subpart AAA hearing and appeal procedures, which provide licensees faced with suspension or revocation with a formal adjudicatory hearing, with a streamlined, informal Petition for Review.⁵⁷ That streamlined review process would also govern Subpart QQQQ. EPA has specifically invited comments on those proposed changes, recognizing that it wants to improve and streamline those procedures while also “preserving the integrity of the program.”⁵⁸ HPBA believes that this streamlined process satisfies the Administrative Procedure Act because it provides licensees with prior notice of revocation and an opportunity to demonstrate compliance and because the Clean Air Act does not require formal adjudicatory proceedings.⁵⁹ The proposed changes may well prove to be advantageous to small manufacturers, for whom formal adjudicatory hearings may prove prohibitively expensive. Moreover, we note that, to our knowledge, there has not been a single hearing since the current rule became effective, so the likely impact of this change is negligible. However, we ask that EPA further justify this change because the formal hearing and appeal procedures were such an

⁵⁵ See generally Curkeet Ferguson, *supra* n.10.

⁵⁶ See *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 49-51 (1983) (agency’s rescission of a regulation was arbitrary and capricious because, among other things, the agency failed to address its prior findings); see also *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 514-15 (2009) (agency may not “depart from a prior policy *sub silentio*” and “must show that there are good reasons for the new policy”).

⁵⁷ 79 Fed. Reg. at 6,367.

⁵⁸ *Id.*

⁵⁹ See *Gallagher & Ascher Co. v. Simon*, 687 F.2d 1067, 1072-73 (7th Cir. 1982).

important part of the current rule and EPA has not addressed the justifications for this change in any detail. In proposing the current NSPS, EPA explained that formal hearing and appeal procedures are appropriate because “revocation could cause great economic harm to the manufacturer or laboratory.”⁶⁰ The potential for harm to licensees still exists and EPA has not explained why its desire for a streamlined process outweighs the risk of harm to manufacturers and laboratories. It must do so to satisfy the Administrative Procedure Act.⁶¹

Finally, EPA should revise the provisions in the proposed rule pertaining to the grounds for revoking certifications. Specifically, proposed §§ 60.533(l)(1)(i) and 60.5475(f)(1)(i) authorize EPA to revoke certifications if it is determined that the appliances manufactured or sold in that model line do not comply with the requirements of Subparts AAA and QQQQ, respectively. EPA’s determination will be based on all available evidence, including “[t]est data from a retesting of the original unit on which the certification test was conducted *or a similar unit*.”⁶² The vague references to “a similar unit” in those provisions should be removed and replaced by the terms “a representative affected wood heater,” “a representative affected representative residential hydronic heater or forced-air furnace,” and “a representative affected masonry heater,” respectively. Each of those terms are in the proposed rule to mean an individual unit “that is similar in all material respects to other [units] within the model line it represents.”

E. EPA SHOULD REVISE THE PROPOSED AUDIT TESTING PROVISIONS (§ 60.533(n))⁶³

Proposed § 60.533(n) allows EPA to select, seemingly at random, appliances for compliance audit testing. It does not appear that EPA proposes to continue the Random Compliance Audit program under the existing regulations. Rather, EPA appears to be doing away with the distinction between Random Compliance Audits (“RCAs”) and Selective Enforcement Audits (“SEAs”), and instead promulgating a provision that vests EPA with broad discretion as to the basis for, and frequency of, audit testing.⁶⁴

Regardless of how the new audit testing provisions are characterized, they are too open-ended and are every bit as unworkable as the RCA provisions in the existing regulations. Rather

⁶⁰ See 52 Fed. Reg. at 5,011.

⁶¹ See *Tourus Records v. Drug Enforcement Admin.*, 259 F.3d 731, 737 (D.C. Cir. 2001) (“A ‘fundamental’ requirement of administrative law is that an agency ‘set forth its reasons’ for decision; an agency’s failure to do so constitutes arbitrary and capricious action.”) (quoting *Roelofs v. Sec’y of the Air Force*, 628 F.2d 594, 599 (D.C. Cir. 1980)).

⁶² See §§ 60.533(l)(1)(i), 60.5475(f)(1)(i) (emphasis added).

⁶³ The audit testing provision (proposed § 60.533(n)) is incorporated by reference into proposed Subpart QQQQ. See § 60.5475(h).

⁶⁴ See 40 C.F.R. §§ 60.533(p)(1)(i) (governing RCAs), 60.533(p)(1)(ii) (governing SEAs). EPA’s proposal seems to draw upon elements of both audit mechanisms in existing Subpart AAA, although the proposed audit testing provisions appear to more closely resemble the existing SEA provisions because they do not incorporate the random number generator set forth in the existing regulations.

than finalize § 60.533(n) as proposed, EPA should recognize that audit testing is not an effective quality assurance/control tool and thus, revise the audit testing provisions to allow for such testing only in limited, defined circumstances, *e.g.*, if EPA has a reasonable suspicion of fraudulent test results. As proposed, the audit testing provisions suffer from too many flaws: (i) the emissions test methods used in audit testing could illegally increase the stringency of the emissions standards if the audit procedures do not properly account for variability attributable to the inter-lab and intra-lab precision of the test methods; (ii) audit testing is duplicative of the independent third party certification system; (iii) the funding mechanism for the audits poses a variety of financial issues, and has proven to be unsound over the twenty-plus year history of the Subpart AAA program; (iv) the proposed audit testing provision would be costly for EPA to implement and would not provide significant benefits justifying these costs; (v) EPA cannot require audit testing with a test method other than that which was used for the underlying certification; and (vi) EPA has improperly eliminated the altitude adjustment provision in the existing regulations.

1. Precision Concerns

EPA's existing regulations acknowledge that significant imprecision of the test method (>1 g/hr) must be taken into account in determining whether a unit passes the emissions test when conducting random compliance audits and selective enforcement audits.⁶⁵ Although imprecision has long been a concern in the industry, the Curkeet Ferguson precision study referred to repeatedly in these comments confirmed the variable nature of wood heater emissions testing, and concluded that the major contributor to variability was the random nature of burning wood.⁶⁶ That study used EPA proficiency test program data and consensus procedures to determine the precision of the various test methods to measure woodstove emissions.⁶⁷

⁶⁵ See 52 Fed. Reg. at 5.010 (in discussing the requirement to do RCAs only at the certification test lab, EPA stated that “[t]his decision was based upon the conclusion that the intralab precision of the test method and procedure was taken into account in the establishment of the standards. That is, the RCA or SEA test results obtained at the same laboratory that conducted the initial certification tests would be compared directly, without any adjustment for precision, against the standard for determining compliance. This provision suggests that manufacturers should provide a sufficient margin in their designs to account for intralab precision. . . . Although data are limited, data obtained by Oregon DEQ suggests that the interlab . . . (sic) four run weighted average precision at the level of the standards is not greater than +/-1 g/hr.”).

⁶⁶ Curkeet Ferguson, *supra* n.10 at 19.

⁶⁷ In order to become accredited under the current NSPS, laboratories must conduct a series of proficiency tests to demonstrate that they can achieve reproducible test results for the emissions tests specified in the regulations. Laboratories must conduct eight test runs of a test on the same wood heater and submit the results to EPA. See 40 C.F.R. § 60.535(a)(5). Laboratories must also continue to demonstrate proficiency. EPA developed a proficiency testing program in which all laboratories conduct certification tests on the same wood heater. Since promulgation of the NSPS in 1987, a database has been maintained that has all the proficiency test results. The majority of the data in the proficiency testing database was derived from this “round-robin” (Continued...)

The existing regulations attempt to account for inter-lab precision by prohibiting testing at a lab other than the lab that certified the model line initially, until EPA has determined the inter-lab precision of the test methods and promulgated an amendment to the regulation based on that determination. If EPA determined that overall precision is greater than 1 gram per hour, the inter-lab component of the precision must be added to the standard when determining compliance in audit testing. While EPA never has made the required precision determination, the Curkeet Ferguson study has definitively addressed the issue. Based on that study, EPA would be required to add anywhere from 4.5 to 6.4 g/hr to the standard for audits performed at labs other than the lab that certified the appliance. Moreover, the study clearly demonstrates that the assumption that intra-lab precision is ± 1 g/hr is erroneous, and that intra-lab precision ranges from 2.9 to 5.4 g/hr (at a 95% confidence level). These new findings require that this value be added to the standard for inter lab audit testing as well, in order to avoid illegally increasing stringency.⁶⁸ Regardless of whether the precision is accounted for, the imprecision of measuring wood heater emissions makes the proposed audit testing mechanism a hopelessly blunt tool for addressing whether manufacturers are paying proper attention to quality assurance/quality control. Even if audit testing for a particular appliance results in emissions that exceed the certification emissions value (and even the applicable emission limit) by several grams per hour, such a test result does not warrant a conclusion that the model line does not comply with the applicable emissions standards. One cannot confidently conclude that an audit test demonstrates non-compliance unless the difference between the audit test result and the certification emission value is greater than the inherent reproducibility and repeatability measures.⁶⁹

testing. Because the same wood heater was used for these tests, a key variable was removed from the comparison, which increases the quality of the data. 14 laboratories contributed data to the proficiency testing database. *See EPA Wood Heater Test Method Variability Study* at 5.

⁶⁸ Failing to account for the precision of the test methods used to determine compliance can effectively increase the emissions standard. This effect could come about because the test method will not establish a compliance margin that adequately eliminates false positives – test results that incorrectly indicate non-compliance due to precision error. *See* Part III.A.3, *supra*. On at least two occasions, the U.S. Court of Appeals for the D.C. Circuit has noted that test methods used to determine compliance could be overturned if they raise a “greater potential for error than is practical or necessary.” *See Amoco Oil Co. v. EPA*, 501 F.2d 722, 743 (D.C. Cir. 1974); *see also Nat’l Petrochemical & Refiners Ass’n v. EPA*, 287 F.3d 1130, 1142 (D.C. Cir. 2002).

⁶⁹ Nor can EPA address the lack of precision by cavalierly directing laboratories to try harder, which it proposes to do. Specifically, EPA suggests that it can improve precision mandating participation in the “round robin” test program every other year in the following manner: “[i]f a lab’s results are not within ± 10 percent of the value at which the heater was certified, then the lab must conduct another 8 runs.” 79 Fed. Reg. at 6,336. This proposal borders on the absurd. Again, the lack of precision is primarily attributable to the inherent variability in burning wood, and no amount of repeat testing can overcome that. HPBA strongly opposes EPA’s suggestion to “strengthen” the “round robin” program in this manner

For these reasons, EPA must eliminate the use of audit testing as a quality assurance/compliance tool in the proposed revisions to Subpart AAA. Although the current RCA program was intended to fulfill a quality assurance/control purpose,⁷⁰ such a function is no longer appropriate in light of the lack of precision. EPA should instead limit audit testing to instances where EPA reasonably suspects fraudulent or otherwise improper certification.

For new appliance categories such as those regulated under QQQQ, EPA should *eliminate audit testing altogether* until it has rigorously assessed the precision of the test methods used to determine compliance. EPA's proposal to include those new appliance categories into the revised NSPS compounds the imprecision problem. There has been no significant data-gathering and analysis of the precision of emissions test methods for the new appliance types, in some cases because the methods are new and untried. Given the inherent variability in burning wood as fuel, such an analysis must be done before these test methods will be used to determine compliance in a post-certification audit program. Developing the necessary data for these analyses is a multi-year project, which simply cannot be accomplished prior to the promulgation of Subpart QQQQ.

2. The Proposed Audit Testing Is Not Only Duplicative of an Independent Third Party Certification System, It Is Less Effective

Audit testing should be confined to specific triggering events, e.g. fraudulent emissions tests. While it can be used to audit an original certification test under limited circumstances, it should not be used as a quality assurance/control mechanism given the precision issues discussed throughout these comments. The quality assurance/control component of the proposed independent third party certification system is the appropriate tool for addressing EPA's concerns that manufacturers create and implement effective quality assurance/control programs. As detailed above, independent third party certification bodies will approve specific quality assurance/control plans for manufacturers, and conduct thorough periodic inspections to determine whether manufacturers are following these procedures and whether units are being produced consistent with the certified design. Certifying entities will prepare and submit audit reports to EPA and specify corrective actions, if necessary. If manufacturers do not respond accordingly, they risk revocation of certification.

Audit testing, by contrast, offers a far less effective and efficient method of assuring compliance. First and foremost, the precision shows us that the woodstove test method is clearly too blunt an instrument to be used as a quality assurance/control tool, particularly in light of the proposed increases in the stringency of the standard.⁷¹ When precision is added for compliance audit purposes, as it must be, it is clear that any emissions consequences of poor quality control would simply be lost in the much greater variability associated with the method—most of which is attributable to the variability inherent in burning wood. Even if one could get beyond this

⁷⁰ See 52 Fed. Reg. at 5,009-10 (“The RCA test would serve as an audit of the original certification test as well as a means of assuring that the manufacturer is producing wood heaters with the same emissions characteristics as the one submitted for certification.”).

⁷¹ The same is likely to be true with respect to the other appliance categories.

problem, audit testing would still be a poor choice as a quality assurance/control tool for another compelling reason: if non-compliance is discovered by an independent third party certifying entity, they have the ability to take swift action against the manufacturer to remedy the problem, and revoke the authorization to use the certification mark if necessary. If, however, non-compliance is discovered through audit testing, EPA must follow the lengthy and cumbersome supplemental review procedures prescribed in the proposed rule to suspend or revoke a manufacturers' certification. Further, EPA lacks the resources to audit more than just a small subset of certified models, while the proposed quality assurance/control requirements would apply to *all* model lines and units within the model types.⁷² In short, even if test method precision was not the insurmountable problem that it is, the quality assurance/control component of the independent third party certification system is a far more penetrating and efficient compliance assurance tool than audit testing could ever be.⁷³

As noted above, EPA should limit the proposed audit testing to apply only in instances where the Agency has reason to suspect that a model line may not be in compliance. That is precisely what was envisioned with respect to SEAs under existing Subpart AAA.⁷⁴

3. EPA's Proposed Funding Mechanism Raises a Number of Concerns

For the reasons set forth in comments by the EPA Accredited Wood Burning Appliance Emissions Testing Laboratory Coalition ("Lab Coalition") on EPA's proposed Audit Test requirements (April 30, 2014; to be docketed at EPA-HQ-OAR-2009-0734-****), HPBA believes that EPA's proposed mechanism to fund audit testing under proposed §§ 60.533(e) and 60.533(n) is hopelessly flawed, as demonstrated conclusively by the nearly 25 years of

⁷² RCAs do not happen often due to those limited resources. In fact, EPA has conducted a mere handful of RCAs in the nearly twenty-five years that the Subpart AAA program has been in existence due to a lack of manpower and financial resources. If EPA were to fully and faithfully carry out the RCA provisions of the existing regulations, a significant increase in funding would be required. In tight fiscal times such as these, increases in public funding are rare, except in circumstances of necessity or that bear the prospect of economic stimulus. Compliance audits for wood heaters do not fall into either of these categories. Further, very little additional benefit would be gained by implementing the proposed audit testing provisions, as the independent third party certification system would have robust inspection and quality assurance/control requirements to detect non-compliance that would apply more broadly than audit testing.

⁷³ HPBA also opposes the use of audit testing as a quality assurance/control tool under the Paperwork Reduction Act. *See* Comments of Hearth, Patio & Barbeque Association Submitted to OMB on the Paperwork Reduction Act Implications of EPA's Proposed Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces, and New Residential Masonry Heaters (to be docketed at EPA-HQ-OAR-2009-0734-****) (hereinafter "HPBA Paperwork Reduction Act Comments").

⁷⁴ *See* 52 Fed. Reg. at 5,010 ("The Selective Enforcement Audit (SEA) program – in which EPA will test wood heaters from a certified model line using a neutral selection scheme criteria for selecting which model lines to test – could include tips or other information leading EPA to suspect that a model line may not be in compliance.").

experience under the existing scheme in Subpart AAA. As explained in more detail in those comments, laboratories will no longer have a means of accurately assessing the financial liability associated with conducting certification tests. Moreover, the funds to be collected by laboratories pursuant to the proposed rule pose complicated accounting and tax issues, which the proposed rule fails to recognize, much less clarify. Finally, the proposed rule contemplates that audit testing could be conducted by laboratories that did not conduct the original certification test—a complication that could trigger unfair competitive practices given the lack of transparency with respect to lab testing fees. Beyond that, there are the issues of what to do when a lab goes bankrupt or leaves the certification business and similar complications when manufacturers leave the business for any of number of reasons. Finally, to the extent that the proposed audit testing is limited to what amounts to SEAs, EPA can use its authority under CAA Section 114 to require the manufacturer to pay for such testing, alleviating the need for a funding mechanism.

4. HPBA Objects to Other Proposed Changes To Audit Testing

HPBA objects to two other proposed changes to the audit regime that would remove important limitations on such audits: the concept that the EPA Administrator could propose an entirely new test method to use in auditing models that were certified under test methods that have gone through notice-and-comment rulemaking; and EPA’s apparent decision to abandon all considerations of altitude differences between laboratories.

First, EPA must delete the proposed language (in § 60.533(n)(2)(iii)) stating that audits may be performed using “a new test method approved by the EPA Administrator.” HPBA interprets that language to mean that a wholly new (and presumably later approved) test method may be used to audit appliances that were certified under an entirely different test method. The proposed rule would thus improperly give the Administrator the ability to create a new test method out of whole cloth even though it fails to forth any standards for establishing or approving that method. EPA is not even required to have a reasonable basis for departing from the certification test method by choosing a new method or to explain and account for any differences between the two test methods. Use of a new test method under these circumstances would be arbitrary and capricious and would be contrary to fundamental requirements of Section 111.⁷⁵ It also would violate the APA’s notice-and-comment requirements. The test methods adopted in the new rule are subject to the necessary vetting that comes through the notice-and-comment process. Any new test methods developed after the rule becomes final should also be published for public comment.

It bears emphasis that using new test methods and procedures to audit compliance with a valid certification would raise serious questions about the validity of the audits and manufacturer’s ability to rely on its certification, as a new test method used in an audit could produce drastically different results. Subject to very narrow exceptions, the law requires that the

⁷⁵ See *Portland Cement*, 486 F.2d at 396 (“[A] significant difference between techniques used by the agency in arriving at standards and requirements presently prescribed for determining compliance with standards, raises serious questions about the validity of the standard.”).

same test methods and procedures used to derive the applicable emissions standards must be used for certification, *see* Part III.A.1, *supra*, and the same constraints apply to audit testing.

Second, HPBA also urges EPA to retain the current rule’s consideration of altitude differences between laboratories. EPA proposes to delete the current rule’s consideration of altitude in selecting laboratories to conduct audit testing. The 1990 NSPS provides that “[i]f emission tests under paragraph (o) of this section are conducted at an altitude different from the altitude at which certification tests were conducted, and are not conducted at pressurized conditions, the results shall be adjusted for altitude in accordance with paragraph (h)(3)(iii) of [§ 60.533].”⁷⁶ Considering altitude is crucial to achieving consistent testing. In fact, in proposing the current rule, EPA recognized that “[a]tmospheric pressure varies directly with altitude. Variations in atmospheric pressure also have the potential to affect the combustion process (i.e., lean/rich air and fuel mixing conditions) and have been shown to affect the level of emissions created by combustion.”⁷⁷ Those variations have been demonstrated by testing conducted on the same wood heater models, using identical test procedures, at a lab located near 300 feet above sea level and another lab located at 6,900 feet above sea level.⁷⁸ Significantly, all of the wood heaters tested at the higher altitude had higher emissions than those at the lower altitude lab.⁷⁹

EPA’s proposal to no longer take altitude into account will necessarily cause problems for any models certified at altitude: if a model undergoing an audit was certified at altitude, any audit testing would have to take that factor into account or risk rendering inaccurate results. In addition, EPA offers *no* justification for no longer taking altitude variations and the consequential effects on combustion and testing into account. Again, an agency must provide a reasoned explanation for reversing course.⁸⁰ EPA has provided no such explanation and thus, EPA must retain the altitude requirements in paragraphs (h)(3)(iii) and (o) of current § 60.533.⁸¹

F. EPA MUST INCLUDE ADDITIONAL TRANSITIONAL PROVISIONS

EPA has three principal tools at its disposal to ensure a smooth transition to the new requirements of the proposed rule: delayed effective dates, “grandfathering” of currently certified or qualified models, and “sell-through” provisions allowing distributors and retailers to sell their

⁷⁶ 40 C.F.R. § 60.533(o)(6).

⁷⁷ 52 Fed. Reg. at 5,003.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *See, e.g., Fox Television Stations, Inc.*, 556 U.S. at 514-15; *Motor Vehicle Mfrs. Ass’n of United States, Inc.*, 463 U.S. at 49-51.

⁸¹ Because we believe that costly emissions testing is not an effective compliance tool, and is therefore unnecessary and lacks practical utility, HPBA has requested that OMB withhold approval of the information collection provisions that would be imposed by random compliance audit testing as a quality assurance/control tool under the Paperwork Reduction Act. *See* HPBA Paperwork Reduction Act Comments, *supra* n.73.

inventories of previously approved or unapproved (uncontrolled models) that were in channels of commerce after the effective date of regulatory requirements prohibiting further sale of such models by manufacturers. The need for transition provisions is something EPA plainly recognizes. Indeed, the preamble to the proposed rule repeatedly acknowledges the need for manufacturers to have adequate lead time to redesign or modify appliance designs, test appliances in accordance with required test methods, and satisfy the requirements for certification.⁸² EPA further acknowledges the possibility of “logjams” at certifying laboratories that will be faced with a high volume of requests for all appliance categories subject to Subparts AAA and QQQQ.⁸³ Inexplicably, however, the proposed rule contains only limited transition provisions in Subpart AAA, and it fails to contain *any* transition provisions in Subpart QQQQ, although EPA has specifically requested comments on the possible need for a compliance extension for single burn rate wood heaters and warm air furnaces.⁸⁴ EPA must do more to make the upcoming transition effective and to avoid severe and completely unwarranted consequences for manufacturers, distributors, and retailers during the early stages of the new program. The following sections address transition issues generally. HPBA’s comments on the proposed standards for each appliance category will provide additional detail on these transition issues. *See* Parts VI.C.2, VII.C and VIII.C, *infra*.

1. EPA Needs to Address Transitional Issues for *All* Categories of Appliances Subject to the Proposed Rule, Not Just Woodstoves

As noted above, the preamble to the proposed rule contains numerous statements reflecting EPA’s recognition of the vital need for transitional schemes. Moreover, EPA’s proposal of a grandfathering scheme for woodstoves and pellet stoves currently regulated under Subpart AAA (discussed below) is further evidence that EPA recognizes that need. Given EPA’s recognition, it is surprising that there are no transitional provisions whatsoever in Subpart QQQQ. Absent any transition provisions, upon finalization of the proposal, manufacturers must stop selling appliances for months (or longer) as they scramble to test appliances and obtain certification in accordance with the final rule—a challenge made all the more daunting by the needless complexity of the proposed certification procedures, *see* Part.IV.B, test method uncertainties, *see*

⁸² *See, e.g.*, 79 Fed. Reg. at 6,332, 6,338, 6,339, and 6,364. EPA has long recognized the need to provide such a transition. As the agency explained in proposing the current NSPS,

Under section 111(a)(2) of the Clean Air Act, any source, the construction of which commences after proposal, is a “new source.” However, EPA can set standards only for classes of wood heaters for which EPA has identified BDT. To be BDT, a technology must be available at reasonable cost. For wood heaters, an important element of the cost of a technology is the cost of delaying production while models with that technology are designed and certified. Thus, BDT applies, and the standards apply, only to those classes of new sources that can meet the standards with reasonable lead time, as discussed below.

52 Fed. Reg. at 5,000.

⁸³ *See id.* at 6,366, 6,370.

⁸⁴ *See* 79 Fed. Reg. at 6,363.

Parts V, VI.B.1, VII.B, and VIII.B, and the log-jam issues implicated by the many new appliance categories that will be regulated by the revised regulations.

Instead of taking appliances subject to regulation under Subpart QQQQ out of commerce for a substantial (and potentially industry-crippling) period of time—something that is sure to result from the proposed rule as currently drafted—EPA must promulgate transition provisions, similar to those proposed in the revised Subpart AAA, which would allow for the continued manufacture and sale of other appliances for a specified period of time following the effective date of the rule. For example, EPA should grandfather existing hydronic heater models that are qualified under Phase 2 of the voluntary program. Similarly, for warm air furnaces, EPA should grandfather models currently listed under CSA B415.1-10. EPA should also delay the effective dates for the proposed warm air furnace standards for a number of reasons, including, but not limited to: (i) such appliances are virtually unregulated at this time; (ii) very few accredited laboratories have experience with the proposed test method (CSA B415.1-10). Finally, EPA must provide sell-through relief to manufacturers of hydronic heaters and warm air furnaces. In commenting on the proposed Subpart QQQQ standards below, HPBA provides additional detail in support of each of these suggestions for how EPA should transition issues with respect to the new appliance categories that will be regulated under Subpart QQQQ.

2. EPA Has Properly Proposed to “Grandfather” Existing Woodstove Certifications

In the proposed revisions to Subpart AAA, EPA has included certain crucial provisions necessary to facilitate successful and cost-effective transition to the proposed Step 1 standard. Under proposed § 60.532(a), models with current EPA certifications as of the effective date of the revised regulations may continue to be manufactured until that certification expires or is revoked, whichever is earlier. EPA also provides in § 60.534(a)(3) that, as an alternative, an affected wood heater may elect to comply with the 2015 particulate matter standards.

With respect to EPA’s request for comments on whether there would be “any critical economic impacts” were EPA not to allow the “full 5-year certification period,”⁸⁵ HPBA strongly urges EPA to retain a transition period reflective of the complete certification term the final rule. EPA correctly notes that it is “important to avoid unreasonable economic impacts on [] manufacturers (mostly small businesses) who need additional time to develop a full range of cleaner models.”⁸⁶ Giving manufacturers less than the full certification period simply fails to account for the substantial time and investments necessary for all manufacturers – mostly small businesses, as recognized by EPA—to undertake necessary new product development and complete the rule’s rigorous new testing and certification requirements.

This already modest transition period will be essential to manufacturers taking on the rule’s assorted demands. It is also needed to avoid “logjams” at certifying laboratories facing a sudden barrage of certification requests for woodstoves, among the many other appliance categories that

⁸⁵ Very few manufacturers would actually have anywhere close to five years between the rule’s effective date and the expiration date of a certification.

⁸⁶ 79 Fed. Reg. at 6,339.

are included in the proposed rule. For these reasons, it is essential that EPA retain the proposed approach of effectively grandfathering current certifications for the remainder of their legal lives.⁸⁷

3. EPA Needs to Strengthen and Expand Its Proposed Sell-Through Provisions

In its changes to § 60.532(b), EPA proposes a six-month sell-through period for retailers and distributors for previously certified woodstoves and pellet stoves manufactured before the effective date of the final rule. EPA rightly recognizes that a sell-through time is necessary to allow the channels of trade to clear for units that were previously certified, but for which a certificate has expired. EPA has not, however, provided nearly enough time to allow for inventories to clear. EPA provides no justification for why a six month period would be sufficient.⁸⁸ Merely asserting that this period of time is reasonable⁸⁹ does not make it so, particularly given that the existing Subpart AAA regulations provide for a longer sell-through period of two years.⁹⁰ Contrary to the Agency's assertions of reasonableness, the analysis prepared by Mr. Charlie Page,⁹¹ an individual with decades of experience in product development, sales, and marketing for various hearth industry manufacturers, explains why six months is far too short of a sell-through period. For previously certified models, EPA should allow for a sell-through period of unlimited duration, since standing inventory can have significant adverse economic effects on distributors and retailers (and manufacturers), and the environmental implications of an unlimited sell through period are *de minimus*. In addition, EPA also must include sell-through relief in Subpart QQQQ. The distributors and retailers of these appliance types are no differently situated than distributors and retailers of woodstoves and pellet stoves, and will suffer grievous harm if appropriate relief is not afforded (including relief for models not previously qualified or certified). Below, HPBA discusses sell-through relief in more detail when commenting on the standards for each appliance category.

⁸⁷ In its comments to EPA's proposed revisions to Subpart AAA, HPBA discusses these transition issues in more detail. *See* Part VI.C.2, *infra*.

⁸⁸ *See* 79 Fed. Reg. at 6,365.

⁸⁹ *See id.*

⁹⁰ *See Int'l Fabricare Inst. v. EPA*, 972 F.2d 384, 392 (D.C. Cir. 1992) ("A conclusory statement, of course, does not in itself provide the 'satisfactory explanation' required in rulemaking.").

⁹¹ *See* Charles Page, JumpStart Marketing, HPBA RETAILER SURVEY RESULTS – INVENTORY AND RETAIL SELL-THROUGH TRENDS (MAY 1, 2014) (Attachment 7 to these comments) ("hereinafter Page Report"). Mr. Page has 37 years of industry experience that spans the full range of product development, marketing and sales functions across the hearth industry. He is well recognized as a modern hearth industry pioneer and expert. His curriculum vitae (CV) is provided at the end of his report.

4. The Proposed Rule's Provisions for Quality Assurance/Control Plans for Grandfathered Units Must Be Changed

EPA should address two significant transitional issues in the proposed rule's quality assurance/control provisions:

First, EPA wrongly assumes that certification entities can approve and oversee quality assurance/control plans for models for which certifications or product clearances were granted based on testing by other laboratories. Put another way, approval and oversight of quality assurance/control plans are not free-standing services offered by all laboratories. Instead, those laboratories that do offer such services link it to the issuance of their listing of the model line in the first instance. What makes quality assurance/control programs work is the very threat that the certifying entity will withdraw the certification listing. For many grandfathered models, however, that threat is absent because the testing that supported certification was performed by laboratories that do not offer the services necessary to meet the quality assurance/control requirements in proposed § 60.533(m). HPBA proposes that EPA address this disconnect by allowing manufacturers of grandfathered models to choose between two quality assurance/control options: (i) to be governed by the requirements in existing 40 C.F.R. § 60.533(o) until the expiration of the grandfathered certification; or (ii) arrange for the independent third party certification entity that is responsible for overseeing quality assurance/control plan requirements for safety standards to begin submitting inspection reports to EPA for the duration of the grandfathered certification. The latter option ought to be feasible given that safety-critical and emissions-critical components of appliances are identical. Of course, that option depends upon whether the manufacturer can reach an agreement with the laboratory to modify their existing contract (for safety standard listings) to add a requirement that EPA receive all inspection reports and manufacturer responses to any identified deficiencies.

Second, EPA should also provide manufacturers of grandfathered models with more time to develop and submit a plan. Sixty days is not enough time to develop and submit a new quality assurance/control plan. It also is unrealistic to afford certifying entities only 30 days to approve a plan. What happens when that deadline is not met, due to other demands on the lab's time or its limited resources in reviewing the proposed quality assurance plans for each certified model line that has a valid certification under the 1990 NSPS? Thirty days also is not enough time for EPA to review and approve the plan, assuming that EPA approval is even necessary. EPA must extend these deadlines. In addition, in the event that the labs or EPA do not approve a plan within the time provided, EPA should make it clear that manufacturers may continue to operate under their existing quality assurance plans until a new plan is approved so long as they have submitted the plan to the certification body and it has not been disapproved.

5. Requirements Imposed Prior to the Effective Date of the Final Rule are Invalid

The proposed rule includes requirements that EPA proposes to impose *prior to* the issuance of a final rule. For example, § 60.533(a)(1) of the proposed rule requires that *prior to the effective date of the final rule*, the manufacturer must submit to EPA the information required in paragraph (b) of that section and follow either the certification process in paragraphs (b) through (e) of that section or the certifying entity based application process specified in paragraph (f) of that section. Section 60.533(d) also purports to require that *prior to the effective date of the*

final rule the Administrator will issue the certificate for the most stringent particulate matter emission standard that the unit meets under § 60.532(a) or (b) of the proposed rule, as applicable. Finally, in § 60.534(b), the proposed rule provides that “Method 5H is no longer allowed for certification testing.” It appears that EPA intends to prohibit Method 5H upon issuance of the proposed rule, rather than on the effective date of the final rule. Nothing in the Administrative Procedure Act or well-settled precedent gives EPA the authority to do so.⁹² The 1990 NSPS remains in full force and effect until replaced by a final rule after notice and comment.

G. EPA MUST REVISE THE DELEGATION PROVISIONS TO REQUIRE EPA TO RETAIN SOLE ENFORCEMENT AUTHORITY OVER REPORTING AND RECORDKEEPING, REVOCATION OF CERTIFICATION, AND HEARINGS AND APPEALS PROCEDURES

The preamble to the proposed rule states that “[t]he intent of the delegation section is to clarify the regulatory provisions for which the EPA has retained sole enforcement authority (definitions, compliance and certification, test methods and procedures, laboratory accreditation, reporting and recordkeeping, revocation of certification, and hearings and appeals procedures).”⁹³ The text of the proposed rule, however, does not reflect this intent, and EPA must revise the text to conform it to the statements in the preamble.

Specifically, the delegation provisions in the proposed rule (§§ 60.539a, 60.35482, and 60.5494) require EPA to retain only the authorities contained in the provisions governing definitions; compliance and certification; test methods and procedures; and laboratory accreditation. Given EPA’s statements in the preamble, this is clearly a drafting oversight on EPA’s part.⁹⁴ It is critical that EPA correct this error in the final rule. Requiring EPA to retain authority over the provisions governing reporting and recordkeeping, revocation of certification, and hearings and appeals procedures is important to ensuring uniform application of these important provisions across the country. For example, it makes no sense to require manufacturers and laboratories to be regulated by various states with the power to implement and enforce revocation of certifications. Nationwide uniformity is absolutely necessary in this area.

V. COMMENTS ON PROPOSED TEST METHODS

If EPA’s proposed standards are to have any meaningful application, they must be backed by sound test methods, supported by a rigorous development process. While some of the methods EPA has proposed reflect such a level of rigor, others are hopelessly flawed—both as a matter of law and of technical merit, reasonableness, and practicability.

HPBA’s comments on EPA’s proposed test methods center on two key points:

⁹² See 5 U.S.C. § 553(b), (d); see also *Tedori v. United States*, 211 F.3d 488, 492 (9th Cir. 2000); *United States v. Springer*, 354 F.3d 772, 776 (8th Cir. 2004); *Sweet v. Sheahan*, 235 F.3d 80, 87 (2d Cir. 2000); *Matter of Appletree Markets, Inc.*, 19 F.3d 969, 973 (5th Cir. 1994); *Blackfeet Nat’l Bank v. Rubin*, 890 F. Supp. 48, 53 (D.D.C. 1995).

⁹³ 79 Fed. Reg. at 6,367.

⁹⁴ Existing § 60.539a requires EPA to retain these authorities.

First, EPA has not satisfied its obligation to use consensus-based test methods under Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”)⁹⁵ and related guidance from the Office of Management and Budget (“OMB”).⁹⁶ Specifically, EPA improperly abandoned key components of several relevant test methods developed by ASTM (a well-known voluntary consensus standards-setting organization) and substituted government-unique components in their place. In so doing, EPA did not make either of the required NTTAA findings with respect to the components of the ASTM methods that it proposes not to use (*i.e.*, that use of ASTM voluntary consensus-based method components would be “inconsistent with applicable law or otherwise impractical”). Test methods are a bundle of components, where each component is a necessary part of the whole. For NTTAA compliance to have any meaning, EPA cannot simply “cherry-pick” discrete components from a relevant consensus-based test method, while substituting government-specific components elsewhere. Yet, here, EPA has done precisely that, running afoul of its NTTAA obligations.

Second, even setting NTTAA concerns aside, EPA’s proposal to substitute government-specific components in place of consensus-based test method components finds no basis in the record for this rulemaking, nor are its proposals technically sound. These shortcomings are explained in detail in comments by the Lab Coalition,⁹⁷ which HPBA supports in full and hereby incorporates by reference.

We discuss these two key points in further detail below in Part V.C. Before doing so, we will provide a brief overview of the relevant statutory requirements in Part V.A. We will also summarize the consensus-based methods implicated by the proposed rule and provide some background on those methods relating to NTTAA compliance in Part V.B.

A. LEGAL BACKGROUND

1. Basic NTTAA Principles

Section 12(d)(1) of NTTAA specifically requires that “all Federal agencies and departments shall use *technical standards* that are developed or adopted by *voluntary consensus standards bodies*, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.” (emphasis added). This mandate is subject to

⁹⁵ 15 U.S.C. § 272 Note.

⁹⁶ NTTAA § 12(d)(3).

⁹⁷ The Lab Coalition has submitted separate comments under separate cover. *See generally* EPA Accredited Wood Burning Appliance Emissions Testing Laboratory Coalition, “RE: EPA’s Proposed Hearth Appliance New Source Performance Standards” (Apr. 30, 2014) (to be docketed at EPA-HQ-OAR-2009-0734-****) (hereinafter, “Lab Coalition Comments”). The Lab Coalition is “an ad hoc group organized to review and submit comments on the proposed standards regarding areas of great concern to the independent laboratories which have vast experience and detailed technical expertise in the performance of the testing required to assess emissions performance.” Lab Coalition Comments at 1. Its members include eight EPA accredited test laboratories located in the U.S. and Canada.

exception where use of voluntary consensus standards would be “inconsistent with applicable law or otherwise impractical.”⁹⁸ As discussed below, these exceptions are narrow ones, and must be supported by findings and explained to OMB.⁹⁹

With respect to the “inconsistent with applicable law” exception, EPA has regularly used voluntary consensus standards developed by ASTM and other consensus standard-setting bodies in prior CAA and other environmental rulemakings, including other rulemakings under Section 111.¹⁰⁰ EPA, thus, plainly has legal authority to use voluntary consensus standards under Section 111, so long as they are consistent with EPA’s determination of BSER for the source category.

Though NTTAA itself provides little definitional gloss, it is clear that the “otherwise impractical” exception is also limited. The OMB Circular defines “impractical” to include “circumstances in which such use would fail to serve the agency’s program needs; would be infeasible; would be inadequate, ineffectual, inefficient, or inconsistent with agency mission; or would impose more burdens, or would be less useful, than the use of another standard.”¹⁰¹ Despite such seemingly broad language, NTTAA’s legislative history confirms that the “otherwise impractical” standard is a narrow one, referring to it as an “exceptional situation.”¹⁰² Further, as discussed in detail below, none of the “impractical” circumstances described in the OMB Circular are implicated by EPA’s use of the voluntary consensus standards relevant to this rulemaking. If anything, ASTM voluntary consensus standards are *less* burdensome and *more* useful than alternative government-unique standards.

⁹⁸ NTTAA § 12(d)(3). Revised Office of Management and Budget (“OMB”) Circular A-119 is the leading source of guidance on NTTAA compliance. This document reiterates the core NTTAA mandate to use standards developed by voluntary consensus bodies but reframes it as a requirement to use voluntary consensus standards “in lieu of government-unique standards” except where the NTTAA exceptions apply. Rev. Cir. A-119, § 1 (1998).

⁹⁹ NTTAA § 12(d)(3). EPA does not dispute these basic principles: the preamble expressly recognizes that NTTAA “directs the EPA to use voluntary consensus standards . . . in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical.” 79 Fed. Reg. at 6,372.

¹⁰⁰ See, e.g., Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units (“CISWIs”), 76 Fed. Reg. 15,704, 15,749 (Mar. 21, 2011) (deciding upon the use of several voluntary consensus standards pursuant to NTTAA); 76 Fed. Reg. 2,056, 2,059 (Jan. 12, 2011) (“adding the most current versions of applicable ASTM standards that allow flexibility in the use of mercury-containing thermometers” to EPA regulations under the Toxic Substances Control Act (“TSCA”) and the CAA).

¹⁰¹ Rev. Cir. A-119 § 6(a)(2).

¹⁰² See H. Rep. No. 104-390, at 25 (1995).

2. Specific NTTAA Issues Implicated in this Rulemaking

HPBA stresses the following key principles and requirements that are of special relevance to this rulemaking, each of which supports the use of relevant voluntary consensus-based standards and test methods in this rulemaking:

- **NTTAA “standards” include performance standards, test methods, and compliance algorithms.** The OMB Circular defines “standards” broadly to include not only performance standards but also the test methods and compliance algorithms by which compliance with performance standards is to be measured.¹⁰³
- **NTTAA compliance requires agency adoption of relevant voluntary consensus test methods in full, except where deviations are supported by one of NTTAA’s exceptions.** An agency does not satisfy its NTTAA obligations merely by “cherry-picking” from a relevant test method, without regard to whether each of its deviations from the method can be justified under either of the NTTAA exceptions. Test methods are the sum total of a number of discrete components, with each component being an integral part of the whole. Accordingly, NTTAA compliance has no meaning if NTTAA does not apply to each component, with “illegality” or “impracticality” findings implicated for each discrete test method element that an agency seeks to substitute a “government-unique” component for. If this were not the case, NTTAA compliance would require nothing but the token use of a single element of a complex test method, leaving the agency complete freedom to substitute government-unique components for all other components. Congress could not have possibly intended such an interpretation of NTTAA. To the contrary, each departure from a relevant voluntary consensus method must be supported under NTTAA, and just because any one deviation from a method may be supported does not mean that others will be.^{104, 105}

¹⁰³ Rev. Cir. A-119 § 3(a)(2) (defining “standard” and “technical standard” to include, among other things, “test methods and sampling procedures”); *id.* § 3(c) (defining “performance standard” to include, among other things, “criteria for verifying compliance”); *see also* NTTAA, § 12(d)(5) (defining “technical standards” to include “performance-based . . . technical specifications”).

¹⁰⁴ The Revised Circular defines “use” of a standard to mean “incorporation of a standard in whole, in part, or by reference.” Rev. Cir. A-119 § 6(a)(1). But this does not mean that agencies can avoid making NTTAA exception findings for the parts *not* used. If it did, NTTAA would be reduced to a nullity. The same conclusion results from the requirement of the Revised Circular that agencies must use voluntary consensus standards “in lieu of” government-unique standards. *Id.* § 6. If an agency must do so, it must use such standards (or its relevant, NTTAA-supported parts) *in lieu of* any potential alternative government-unique specifications, to the extent NTTAA’s exceptions do not apply. *Id.* (emphasis added). Again, these provisions have no meaning if not applied to each component of the standard.

- ***Agency participation in voluntary consensus standard-development is intended to promote agency use of voluntary consensus standards.*** NTTAA requires agencies both to (1) consult with voluntary consensus standard-setting bodies during the regulatory process and also (2) participate in the voluntary consensus standard-setting process when appropriate.¹⁰⁶ Agency participation is required for the express purpose of “[e]liminat[ing] the necessity for development or maintenance of separate Government-unique standards.”¹⁰⁷
- ***Agencies must adequately justify decisions not to use applicable portions of relevant voluntary consensus standards.*** Where one of the two exceptions permitting use of voluntary consensus standards (or components thereof) purportedly applies, the head of an agency rejecting use of voluntary consensus standards must submit to OMB an explanation of the reasons for invoking one of the NTTAA exceptions.¹⁰⁸ The preamble to a proposed rule must include notice of any intent to use a government-unique standard in lieu of a voluntary consensus standard, must identify the relevant voluntary consensus standard/s, and must provide an explanation for the government’s proposal not to use it.¹⁰⁹ In any final rule, the agency must acknowledge and respond to all comments on the agency’s proposal not to use relevant voluntary consensus standards and provide and

¹⁰⁵ See *In the Matter of Guidelines for Evaluating the Env'tl. Effects of Radiofrequency Radiation*, 12 F.C.C.R. 13494 (1997). This decision clearly supports the “bundle of sticks” view of test methods and standards, and the need to make NTTAA findings on that basis.

¹⁰⁶ NTTAA § 12(d)(2) (directing that “Federal agencies and departments shall consult with voluntary, private sector, consensus standards bodies and shall, when such participation is in the public interest and is compatible with agency and departmental missions, authorities, priorities, and budget resources, participate with such bodies in the development of technical standards”); see also Rev. Cir. A-119 § 4(a)(1) (“The [NTTAA] and the Circular encourage the participation of federal representatives in [consensus standards] bodies to increase the likelihood that the standards they develop will meet both public and private sector needs.”).

¹⁰⁷ Rev. Cir. A-119 § 7(a)(1). A January 2012 memorandum, jointly issued by OMB, the U.S. Trade Representative, and the Office of Science and Technology Policy, further confirms the importance of agency participation in private standard-setting and appeals to agencies to actively engage in the process: “When an agency commits to a cooperative standards development effort with industry, that commitment should be maintained, as resources permit, and the resulting standards should be used where feasible.” See Aneesh Chopra, Miriam Sapiro, and Cass R. Sunstein, Memorandum for the Heads of Executive Departments and Agencies, Principles for Federal Engagement in Standards Activities to Address National Priorities, No. M-12-08 (Jan. 17, 2012), at 3, available at <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-08.pdf>.

¹⁰⁸ NTTAA § 12(d)(3).

¹⁰⁹ Rev. Cir. A-119 § 11(a).

explain its final decision.¹¹⁰ These steps are in addition to the annual reporting of use of government-unique standards (and explanation of reasons for such standards) to OMB.¹¹¹

3. Other Principles Guiding EPA’s Selection of Test Methods

Apart from and in addition to those requirements imposed under NTTAA, EPA must ensure that its selected test methods can be supported as a matter of good science and reasonable regulation.

First and foremost, EPA is obligated to ensure that its proposed test methods support and do not interfere with its identification and subsequent implementation of BSER under Section 111. To the extent that its test methods would do so, those methods are *perforce* illegal and cannot be justified under the CAA.

In addition to insuring compatibility with BSER, EPA also must ensure that its test methods are technically sound, practical and cost reasonable to implement. There is a wide range of choices to be made in formulating each element of a test method. Each one has potentially significant implications with respect to—among other things—the accuracy and precision of the test results, and their “real world” representativeness. EPA’s job is to determine which of those existing test methods that may be practically employed best accounts for the range of relevant considerations.

With respect to this rulemaking, HPBA takes the position that relevant ASTM methods—developed through an established consensus-based, data-driven process involving EPA, states, and industry—are fundamentally more sound than unilaterally-developed, untested alternatives proposed by EPA for certain appliance categories. These ASTM methods further are fully consistent with EPA’s standard-setting obligations under Section 111.

B. RELEVANT VOLUNTARY CONSENSUS TEST METHODS IMPLICATED IN THIS RULEMAKING.

In the seven or more years preceding the proposal of the revisions to the NSPS, a number of voluntary consensus-based test methods have been developed (and revised), specifically for the purpose of eventual EPA adoption in new and updated residential wood heater standards. This work reflects considerable effort and expense by the Hearth Industry, EPA and other stakeholders, and has resulted in the following methods:

- ASTM E2515-11 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel:¹¹² This method, essentially a re-codification and refinement of EPA Method 5G-3, is designed to measure particulate matter emissions in an assortment of hearth appliances, including woodstoves, pellet-burning appliances,

¹¹⁰ *Id.* § 11(b).

¹¹¹ *See id.* § 9.

¹¹² *See* <http://www.astm.org/Standards/E2515.htm>.

factory-built fireplaces, masonry fireplaces, masonry heaters, indoor furnaces, and indoor and outdoor hydronic heaters.¹¹³

- CSA test procedure B415.1-10: This method includes procedures used to measure efficiency using the stack loss method. It also includes provisions specifying fueling, operation and data reduction procedures for determining particulate matter emissions from warm air furnaces, as well as performance standards for these appliances.
- ASTM E2779-10 Standard Method for Determining Particulate Matter Emissions from Pellet Heaters:¹¹⁴ This method specifies the fueling, operating, and data reduction procedures for determining particulate matter emissions from pellet heaters. This method expressly incorporates the E2515 dilution tunnel method for particulate matter emissions measurements.
- ASTM E2780-10 Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters:¹¹⁵ This method specifies fueling, operating and data reduction procedures for determining particulate matter emissions from woodstoves. It is a re-codification and refinement of the current version EPA Method 28, specifically intended for regulatory implementation in EPA’s revised Subpart AAA regulations.
- ASTM E2618-13 Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Outdoor Solid Fuel-Fired Hydronic Heating Appliances:¹¹⁶ The ASTM outdoor hydronic heater test method specifies fueling, operating, and data reduction procedures for determining particulate matter emissions and efficiency for cycling hydronic heaters. The method specifies use of cordwood fuel for batch fired models, and pellet or other fuels specified by the manufacturer for continuous feed models. It requires testing at several specified heat output rates.
 - Annex A1: Annex A1 to the ASTM hydronic heater method prescribes a cordwood-based method for testing of full thermal storage hydronic heater models.
 - Annex A2: Annex A2 to ASTM E2618-13 prescribes a cordwood-based method for the testing of non-integral partial thermal storage hydronic heater models.¹¹⁷

¹¹³ In the proposed rule and preamble, EPA references a somewhat less recent version of ASTM 2515 (ASTM 2515-10, rather than the 2011 edition). We presume that this was in error and urge EPA to correct this reference throughout and apply ASTM 2515-11 in its final rule.

¹¹⁴ See <http://www.astm.org/Standards/E2779.htm>.

¹¹⁵ See <http://www.astm.org/Standards/E2780.htm>.

¹¹⁶ See <http://www.astm.org/Standards/E2618.htm>.

¹¹⁷ The preamble specifically refers to potential use of “[o]ne or more versions of Appendix X2 being considered as part of ASTM work product WK26581.” 79 Fed. Reg. at 6,345. This reference erroneously implies that Annex A2 to ASTM E2618-13 has not been finalized. To the (Continued...)

1. The ASTM and CSA Methods Implicated Here Have Been Rigorously Developed in Conformance with NTTAA's Expectations.

Each of the above ASTM and CSA methods clearly qualifies as a voluntary consensus standard under NTTAA. Both ASTM and CSA are well-recognized voluntary consensus standard-setting bodies, with extensive history and experience in the development of test methods in this and other areas. Moreover, each of these methods was developed through rigorous adherence to current ASTM and CSA procedures, under which a single stakeholder with the merits on its side will prevail.

ASTM International is accredited by the American National Standards Institute ("ANSI") as a Standards Development Organization. ASTM's procedures reflect vigorous emphasis on openness, transparency, objectivity, consensus, and merits-based deliberation.¹¹⁸ The process begins at the subcommittee level (in this case, Subcommittee E06.54 on Performance of Solid Fuel Burning Appliances). While only ASTM members' votes count in required ballot returns and majorities, participation in subcommittee meetings and submission of comments on ballots is open to any interested person, and all comments are treated equally. In establishing subcommittee membership, ASTM requires that "User," "Consumer," and "General Interest" comprise a majority over "Producer" members, creating an internal check against any possible industry bias.

All proposed ASTM standards (and *any* change to an existing ASTM standard) must be approved by letter ballot at each of two levels: the subcommittee, and the main committee.¹¹⁹ At the subcommittee level, participants are afforded a minimum 30 day voting period, at the conclusion of which there must be at least a 60% return, and a two-thirds majority for any vote either in the affirmative or negative. *All* negative ballots (votes objecting to the change) must be addressed. A negative ballot will be considered editorial, persuasive, or not-persuasive. While editorial changes will not change the content or results of the vote, any persuasive negative ballot raising substantive concerns requires a change and re-balloting of the subcommittee. If a negative ballot is deemed not-persuasive, reasons must be provided for the determination. At the main committee level, another 30 day voting period is provided, and a 60% minimum return and 90% affirmative vote is required for the standard or change to pass. As at the subcommittee level, all negative ballots must be addressed. Moreover, the main committee must review all subcommittee findings regarding not-persuasive negative ballots, and reach a two-thirds majority vote on the findings. The ASTM Committee on Standards conducts a final review of all standards actions to ensure adherence to ASTM's rigorous process requirements. All existing ASTM standards must begin the process of being revised, reissued, or withdrawn within a period

contrary, Annex A2 currently exists in mandatory and final form, having been issued concurrent with the other 2013 revisions to ASTM E2618-13.

¹¹⁸ See generally Rick Curkeet, ASTM STANDARDS DEVELOPMENT (undated) (Attachment 8 to these comments).

¹¹⁹ In addition, the ASTM Society will review the standard or change if requested by either the subcommittee or main committee.

of five years.¹²⁰ In short, these procedures are designed to insure that a minority of one (even if that person or entity is not a member of the subcommittee) will prevail, if that person or entity has the merits on his side.

2. EPA Has Participated in the Development of All Relevant ASTM Methods, As Required By NTTAA.

EPA's participation in the development of these methods underscores the relevance of those standards and their fitness for use in this rulemaking. EPA is an organizational member of ASTM, with a long history of active participation in the development of ASTM standards. As required under NTTAA, EPA has been consistently involved in the proceedings to develop each of the above-listed methods. While required by the OMB Circular implementing NTTAA, its participation was far more than *pro forma*; EPA representatives on the ASTM work groups almost always attended and participated in meetings and conference calls and made their views known on the issues under consideration. The depth of their participation clearly supports the view that the Agency, like the industry participants, believed that these efforts would yield test methods which could be used in the revised NSPS program.

3. EPA's Position That Lack of Participation by States Or Other Parties in the ASTM And CSA Proceedings Warrants the Effective Reopening of Those Proceedings in This Rulemaking Proceeding Is Unfounded.

EPA has solicited comments and supporting data on all aspects of all of the ASTM test methods that it is proposing for use, based upon concerns about the level of participation among states in developing them.¹²¹ In particular, during development of the original ASTM hydronic heater test method for cycling units, some states became concerned that ASTM's Intellectual Property Policy required them to turn over state intellectual property and would prevent this work product from entering the public domain. As a result, some state regulators resigned from ASTM's Subcommittee E06.54 on Solid Fuel Burning Appliances, which oversees the development of the ASTM test methods relevant to this rulemaking.¹²²

¹²⁰ If eight years expire and a standard has not been either revised or reissued, then it is automatically withdrawn.

¹²¹ See 79 Fed. Reg. at 6,341-42.

¹²² The decision to withdraw in the first instance is hard to understand. ASTM's website identifies no less than 13 state regulatory agencies as general "organizational" members of ASTM, a number of which are from the very states that have raised concerns with EPA. See <http://www.astm.org/MEMBERSHIP/memborg/index.htm>. And states have long been robust participants in the development of ASTM standards, many of which have later been applied in federal regulatory efforts. Moreover, the "intellectual property" in question would consist of any language offered for use in the standards, which hardly seems a sufficient basis for the radical step of resigning from the committee.

Leaving aside the legal significance of this issue, EPA overstates the facts. While the level of state participation varied, states in many cases have played and continue to play a role, including agencies that formally resigned from ASTM's Subcommittee E06.54.¹²³ Moreover, one of the ASTM test methods of relevance to this rulemaking (the dilution tunnel method) was finalized *before* any concerns about state participation ever arose, and yet others may not have even been of interest to state regulators (*i.e.*, masonry heater method). And the lack of participation by states in the development of the original ASTM test method for cycling hydronic heaters (ASTM E2618), was rendered entirely moot by the recent revision of that method to conform it to EPA Method 28 WHH, a method that was developed with robust state agency (and industry) participation. Some state agencies also participated in the development of the ASTM TM for Partial Thermal Storage models.

Likewise, there can be no questioning key stakeholder involvement in the development of CSA's method for measuring the overall efficiency of hearth appliances, and for emissions testing of warm air furnaces (B415.1-10).¹²⁴ As recognized by EPA, the CSA "process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard," and "CSA worked for years on development of this test method that has its roots in earlier U.S. efforts on wood heaters/stoves."¹²⁵ The Task Group charged with development of the CSA B415.1-10 broadly included both governmental and non-governmental stakeholders, representing manufacturers, regulatory agencies, users and general interest.¹²⁶ While no U.S. state was a member, there was robust Canadian governmental participation, including participation by Environment Canada and several Canadian Provinces. Mr. Peter Westlin from U.S. EPA was also a member of the Task Group.¹²⁷

C. EPA MUST USE THE RELEVANT ASTM AND CSA METHODS, ABSENT NTTAA FINDINGS TO SUPPORT USE OF ALTERNATIVE "GOVERNMENT-UNIQUE" METHODS OR SPECIFICATIONS.

EPA is obligated to use the voluntary consensus test methods identified above, absent NTTAA exclusionary findings supporting "government-unique" methods or substitute provisions. Here, EPA's proposed test methods, including its deviations from various ASTM method specifications, fall short of its NTTAA compliance obligations in a number of areas. And regardless of its NTTAA obligations, EPA's proposed alternatives are unsound from a technical standpoint and in other respects. We discuss each of the relevant test methods proposed and HPBA's concerns with them in detail below. We will conclude this section by

¹²³ Many state agencies that have formally resigned from ASTM Subcommittee E06.54 remain on the relevant ASTM distribution lists and provide comments on draft documents and ballots.

¹²⁴ See 79 Fed. Reg. at 6,347.

¹²⁵ *Id.* at 6,346.

¹²⁶ Robert Ferguson, BRIEF SYNOPSIS OF THE DEVELOPMENT OF THE CSA B415.1-2010 STANDARD (WITH FOCUS ON SOLID FUEL FIRED WARM AIR FURNACES) (Dec. 1, 2010), at 2 [EPA-HQ-OAR-2009-0734-0217].

¹²⁷ *Id.* at 6-7.

addressing the compliance algorithm that EPA has proposed for all appliance categories. This is a radical new approach for determining compliance, with significant implications for BSER determinations using any of the existing databases for affected appliance categories. Accordingly, a sophisticated statistical modeling method was needed to evaluate its implications.

1. Generic Methods

HPBA agrees with EPA's proposal to incorporate ASTM E2515-11 and CSA procedure B415.1-10 in its methods for each of the hearth appliances covered by the proposed rule. EPA has proposed to use ASTM E2515-11 "for the sampling and analysis portion for all the appliances" under the proposed rule.¹²⁸ This approach is well-supported under NTTAA and from a technical standpoint, and HPBA fully supports this proposal. For the same reasons, HPBA likewise supports EPA's determination to use CSA 415.1-10 for purposes of efficiency testing throughout the proposed rule.

2. Appliance-Specific Methods

In addition to the generic methods discussed above, EPA has proposed separate test methods for each of the subcategories of appliances covered under the proposed rule. These appliance-specific test methods provide detailed instructions for the operation of appliances during testing to assure that smoke is generated in a reasonably consistent manner and in a way that bears some relation to consumer use patterns. The appliance-specific methods further specify compliance algorithms, *i.e.*, how test data is to be aggregated for purposes of producing values in the format of prescribed emission limits, in order to determine compliance. We discuss EPA's proposed appliance-specific methods in detail below, with an eye toward NTTAA compliance and other legal and practical issues.

a. Pellet Appliances

HPBA agrees with EPA's proposal to incorporate the ASTM method for testing of pellet heaters, ASTM E2779-10 (Standard Method for Determining Particulate Matter Emissions from Pellet Heaters) in the proposed rule.¹²⁹ This method, like all ASTM methods, was developed through a rigorous voluntary consensus-based process by a well-recognized voluntary consensus standard-setting body. It is thus fully NTTAA compliant. Not surprisingly, neither EPA nor any stakeholder has identified any reason why application of ASTM's relevant pellet stove method would conflict with law or be otherwise impractical.

b. Woodstoves

EPA's proposed revised standards for woodstoves contemplate use of proposed Method 28R, a revision to the existing EPA woodstove test method (Method 28). HPBA strongly objects to

¹²⁸ 79 Fed. Reg. at 6,342.

¹²⁹ *See id.* ("E2779-10 is a sound method for measuring emissions from pellet heaters/stoves and includes reasonable measures to reduce testing costs for continuously-fed appliances, and we are proposing its use.").

EPA's proposed Method 28R as contrary to NTTAA. This method omits or modifies important specifications and procedures included in ASTM E2780-10—a voluntary consensus-based method developed specifically in response to issues identified in the course of 25 years of testing under the current Subpart AAA. To put it another way, Method 28R “Christmas-trees” the ASTM method, invoking certain parts of it while substituting for others EPA's own preferred but unsupported specifications. Because these departures cannot be justified under NTTAA (as they each must be¹³⁰), they are unwarranted. And, as persuasively demonstrated by the Lab Coalition, EPA's proposed substitutes are technically unsound.

1. EPA's Proposed Deviations from ASTM E2780-10

EPA proposes to deviate from the ASTM method in a variety of ways. The following departures from the ASTM method are particularly important:

- Low burn rate/alternative low burn rate specifications: EPA Method 28R specifies a low burn rate of 1.0 kg/hr, whereas the ASTM method specifies a low burn rate of 1.15 kg/hr. Moreover, the ASTM method (but not Method 28R) includes an alternative procedure for specifying the low burn rate, which was borrowed from CSA B415.1-10. It provides for a low burn rate that is a specified percentage below the high burn rate for the appliance, an approach referred to as a “turn down ratio.” EPA has not proposed to allow this alternative low burn rate determination procedure.
- Four burn rates versus three: Method 28R requires testing at four different burn rates, whereas the ASTM method requires testing at three different burn rates.
- Startup procedures: EPA's proposed Method 28R eliminates the 5 minute startup period currently allowed under Method 28. The ASTM method specifically incorporates a 5 minute startup period, as well as an additional 30 second increase in startup time per cubic feet of firebox volume, so as to better account for concerns about repeatability and reproducibility of test results.
- Firebox loading instructions: EPA has proposed to prohibit manufacturers from specifying loading instructions and designating the volume of the firebox to be used for testing, in light of the possibility that some consumers may not follow such manufacturer instructions. ASTM specifically considered such a provision but rejected it.
- Test fuel specifications: Method 28R deviates from a number of test fuel specifications currently included in Method 28, as well as the ASTM method. For example, EPA has proposed to tighten the fuel moisture content (from 19 - 25 percent to 22.5 percent +/- 1 percent); fuel load weight range (from 7.0 lb/ft³ +/- 0.7 lb/ft³ to 7 lb/ft³ +/- 0.07 lb/ft³); and test-initiation coal-bed weight specification (from 20 - 25 percent to 22 percent +/- 1 percent of fuel load weight).

¹³⁰ See Part V.A.2, *supra*.

2. EPA Has Failed to Justify Its Departures from the ASTM Method under NTTAA.

In the preamble, EPA appears to take the position that its proposal to use ASTM E2780-10 and other test methods *in part* fulfills its NTTAA compliance obligations, despite the absence of any finding that portions not used are either contrary to law or otherwise impractical.¹³¹ EPA, however, cannot fulfill its NTTAA obligations merely by using part of a method, where use of that method's remaining parts is neither contrary to law nor otherwise impractical. NTTAA clearly contemplates that determinations under either exception must be made for each test method specification from which an agency intends to deviate.¹³²

Not only has EPA failed to make any such determinations, it has no legal or factual basis for making them. To justify any of its departures from ASTM E2780-10 as contrary to law, EPA would need to demonstrate a clear conflict between application of the particular test methods and the CAA's BSER standard or other some other statutory or regulatory requirement. We see no basis for finding any such conflict.

Similarly, there would be no basis for EPA to make the "otherwise impractical" findings for any of the specifications in question. ASTM E2780-10 was developed by a well-recognized voluntary consensus standard organization, with EPA's active involvement, specifically to correct flaws and refine EPA Method 28, to reflect the past 25 years of experience. To date, EPA has provided no basis for a claim that ASTM E2780 is in any way "impractical." In voting on the various ASTM specifications at issue, EPA never filed any negative ballots in objection.¹³³ Likewise, EPA has not identified any data quality concerns or other such circumstances that would warrant application of Method 28R or any other alternative government-unique standard here.

Since there are no grounds to support any possible finding that the provisions for which EPA proposes substitutes are contrary to law or otherwise impractical under the circumstances here, EPA's proposal to deviate from E2780-10 in this rulemaking violates NTTAA. In any event,

¹³¹ See 79 Fed. Reg. at 6,372 (listing voluntary consensus methods proposed either in full or in part, and articulating no NTTAA "contrary to law" or "otherwise impractical" findings for methods used only in part).

¹³² See Part V.A.2, *supra*.

¹³³ EPA did, however, express reservations about the low burn rate specifications, but never presented data or analyses supporting its reservations, much less file negative ballots in objection. In the preamble, the most that EPA can say about ASTM E2780-10 is that it simply "do[es] not agree with all the changes that ASTM has made for adjustable burn rate wood heaters, and some provisions are not as protective as we, and some states, now believe they need to be." 79 Fed. Reg. at 6,342. Of course, for the reasons discussed here and in the Lab Coalition Comments, *supra* n.97, there is good reason for each of the ASTM specifications, and each finds strong support in the existing data and analyses. But even to the extent EPA maintains disagreement with the ASTM method (one in which it had a leading role in developing), that is a far cry from suggesting, much less demonstrating, that the ASTM method is in any way impractical.

even if NTTAA compliance were not at issue here, the Lab Coalition’s comments demonstrate why EPA’s proposed substitutes are technically unsound and impractical.

c. Hydronic Heaters

EPA’s proposed test methods for hydronic heaters suffer from similar flaws as the proposed test methods for woodstoves. EPA has not satisfied its obligation to use applicable voluntary consensus test methods for hydronic heaters, having failed to make NTTAA exclusionary findings supporting “government-unique” methods or specific substitute provisions. In addition, EPA’s proposals are technically unsound on the merits for the reasons provided in the Lab Coalition’s comments.

As a threshold matter, EPA proposes to subject hydronic heaters of all types—including standard cycling units, heaters equipped with a full thermal storage unit, and heaters equipped with partial thermal storage—to a single set of performance standards. However, because of the technical distinctions across these various types of hydronic heaters—and the different methods that have been developed over the years to address those differences—we address the test method issues for each type of hydronic heater separately in the subsections that follow.¹³⁴

1. Cycling Hydronic Heaters

Precisely what EPA has proposed for testing cycling models is unclear. It appears that, for Step 1, manufacturers of cycling models generally must use proposed Method 28 WHH to measure heat output (MMBtu/hr), and must use Method 28 WHH in conjunction with E2515-11¹³⁵ to measure particulate matter emissions (lb/MMBtu heat output).¹³⁶ ASTM’s method for cycling models—ASTM E2618-13—is not proposed.¹³⁷

¹³⁴ In doing so, we note that EPA has in many cases failed to make clear precisely what methods are intended to apply for each type of appliance and urge EPA to clarify ambiguities in the final rule. EPA must ensure that, regardless of what methods are ultimately required, the methods and their application are clear and unambiguous to manufacturers and laboratories responsible for conducting testing and certifying compliance. Each test method provision must specify precisely those units to which it applies, and whether it applies at Step 1, Step 2 (or Step 3), or both. As it stands, the lack of clarity in the proposed rule’s test method provisions precludes effective understanding and implementation of the rule, and further inhibits meaningful comment.

¹³⁵ As stated above, HPBA supports EPA’s decision to use ASTM E2515-11 (dilution tunnel method) as a general matter.

¹³⁶ Proposed Method 28 WHH replaced EPA’s prior Method 28 OWHH in late 2011 and has been used in EPA’s voluntary partnership program ever since.

¹³⁷ The text of the proposed rule fails to specify any required test fuel for cycling models in Step 1, but the preamble indicates that manufacturers must test with both cribwood and cordwood. HPBA’s comments on proposed Subpart QQQQ address why it is improper for EPA to require testing with both fuel types. Moreover, even if this were appropriate, EPA has not proposed the (Continued...)

At Step 2/3, it appears that manufacturers must again use proposed Method 28 WHH to measure heat output (MMBtu/hr) and Method 28 WHH in conjunction with E2515-11 to measure particulate matter emissions (lb/MMBtu heat output). Although the proposed regulatory text is unclear, the preamble states that manufacturers are required to test and certify using only cordwood at Step 2/3.¹³⁸ Again, that proposal is confusing given Method 28 WHH's requirement to test with oak cribs and EPA's failure to identify a method for testing cycling models with cordwood.¹³⁹

i. EPA's Proposed Deviations from ASTM E2618-13

Given their shared genesis, EPA Method 28 WHH and ASTM E2618-13 have much in common. As discussed in the Lab Coalition's comments, the predecessor to Method 28 WHH, Method 28 OWHH, is derived from an early draft of the earlier ASTM method.¹⁴⁰ In the interim pending the ASTM method's finalization and subsequent revision, various problems with EPA Method 28 OWHH became apparent.¹⁴¹ As a result, EPA revised the method in 2011, renaming it Method 28 WHH and making various technical changes including some that had already been adopted in the then-existing version of ASTM E2618. Late in 2013, a new version of ASTM E2618 was adopted to conform it to EPA Method 28 WHH. Thus, the current version of ASTM E2618 is nearly identical to EPA's proposed Method 28 WHH, with two major exceptions:

- Test fuel specifications: EPA's Method 28 WHH requires testing with oak cribs, in contrast to the ASTM method, which requires testing with cordwood—the fuel recommended for use by manufacturers in batch-fired models.
- Heat output capacity validation procedures: Though the proposed rule preamble makes no mention of any proposal to change Method 28 WHH as currently contained in EPA's voluntary program Partnership Agreement, the text of Method 28 WHH as set forth in Appendix A-8 of the proposed rule includes a significant difference in the procedure for heat output capacity validation. Under the proposed revisions, two measures of heat output capacity validation apply: (1) the first test run must produce a heat output rate

only test method for cycling models that specifies cordwood as the fuel type, *i.e.*, ASTM E2618-13.

¹³⁸ HPBA presumes that the test methods applicable to Step 2 under the proposed approach would also apply to Step 3 of the alternative approach. EPA, however, has not clarified which test methods would apply to Step 2 under the alternative approach.

¹³⁹ Nowhere in the proposed rule's text or preamble does EPA propose using ASTM E2618-13 for cycling models. Unlike Method 28 WHH, the ASTM method does specify testing cycling models with cordwood.

¹⁴⁰ Specifically, Method 28 OWHH was taken almost verbatim from draft 4 of a test method that was under development by ASTM Subcommittee E06.54 in early 2006. That test method was eventually published as ASTM E2618, which was based on draft 12 of the ASTM procedure.

¹⁴¹ See Lab Coalition Comments, *supra* n.97 (comment on Methods 28WHH and 28WHH-OTS); see also Part VII.B.1, *infra*.

within 10% of the manufacturer's rated heat output capacity throughout the test run; and (2) the first test run must produce an average heat output rate within 5% of the manufacturer's rated heat output capacity. If either of these standards is not met, the test must be terminated. Under the ASTM method – *and under the current version of Method 28 WHH, as used in the voluntary program* – a heat output rate within 10% of the manufacturer's rated heat output capacity alone satisfies heat output capacity validation requirements. Where the relevant standard is not met, the manufacturer may agree to accept downrating of the appliance, and allow testing to be continued (under the ASTM method) or restarted (under proposed Method 28 WHH).

ii. *EPA's Proposed Test Method for Cycling Models is Unsupported Under NTTAA And On the Merits.*

First, EPA's undisclosed (in the preamble) proposed revision of Method 28WHH's heat output capacity validation procedures is completely inappropriate. Even assuming that EPA's failure to announce this change was an unintentional oversight, EPA cannot justify hiding such significant regulatory changes in the proposed text of an appendix to proposed regulation without addressing or even announcing them in the preamble. Such reliance on a proposed rule's "fine print" is "no notice, must less adequate notice" of changes to existing provisions.¹⁴²

Second, and even if EPA had provided proper notice, EPA has not made the requisite exception findings under NTTAA for failing to use ASTM E2618-13's heat output capacity validation procedures. ASTM's heat output capacity validation procedures are the same ones still being implemented in EPA's voluntary program (*i.e.*, under the existing Method 28 WHH), and there is nothing that would make them either contrary to law or otherwise impractical. Moreover, as discussed in the Lab Coalition's comments, the ASTM procedures are technically sounder on the merits, as they better account for known variability in output rates over the course of any given test run.

Third, there is no basis under NTTAA for failing to use other specifications contained in ASTM E2618-13. On the whole, there is very little difference between the ASTM method and EPA's own Method 28 WHH. The latter merely built upon an earlier version of the former, and the former was revised to harmonize with the latter.¹⁴³ Given their extreme similarity, it simply cannot be the case that ASTM E2618-13 as a general matter is either contrary to law or otherwise impractical. If Method 28 WHH can be legally and practically implemented, so can ASTM E2618-13.

¹⁴² See *AFL-CIO v. Donovan*, 757 F.2d 330, 339 (D.C. Cir. 1985) (agency failed to supply notice of regulatory change by reprinting forty pages of regulations, including the proposed change at issue, without identifying it in a preamble that identified other proposed regulatory changes); see also *McLouth Steel Prods. Corp. v. Thomas*, 838 F.2d 1317, 1323 (D.C. Cir. 1988) (relying on *Donovan*, holding that "[a]n agency may not introduce a proposed rule in [a] crabwise fashion").

¹⁴³ See Lab Coalition Comments, *supra* n.97 (comment on Methods 28WHH and 28WHH-PTS).

A different conclusion is warranted, however, regarding ASTM's cordwood fuel specification. As discussed in Parts V.C.2.c and VII.B of these comments, EPA's database for cycling models was developed using EPA Methods 28 OWHH and 28 WHH, both of which specify the use of cribwood. Accordingly, requiring use of cordwood for cycling models to determine compliance would be contrary to BSER, pursuant to longstanding D.C. Circuit precedent, and therefore contrary to law.¹⁴⁴ Accordingly, EPA's proposal to require testing with cribs for these models can be supported under NTTAA, under the "illegality" exception.

2. Hydronic Heaters with Partial Thermal Storage

The proposed rule appropriately contemplates the use of different test methods for hydronic heater models equipped with external heat storage, though the proposal in this area also lacks clarity. During Step 1, manufacturers of hydronic heaters *with external heat storage units* must: (i) test *with cribwood* as specified in Method 28 WHH and measure heat input and output according to ASTM 2618-13; and (ii) test *with cordwood* as specified in EPA's proposed partial storage method, a *verbatim* reproduction of the Brookhaven National Lab method entitled "A Test Method for Certification of Cord Wood-Fired Hydronic Heating Appliances With Partial Thermal Storage: Measurement of Particulate Matter (PM) and Carbon Monoxide (CO) Emissions and Heating Efficiency of Wood-Fired Hydronic Heating Appliances with Partial Thermal Storage" ("BNL Method"). Because Proposed 40 C.F.R. § 60.5476(a)(2) does not differentiate between partial and full external heat storage units, we must presume that manufacturers of hydronic heaters with partial thermal storage must conduct both the above cribwood testing and cordwood testing requirements at Step 1.

During Step 2/3, manufacturers of hydronic heaters with partial thermal storage must test exclusively with cordwood using the proposed BNL Method. Other than for purposes of measuring heat input and output at Step 1, use of ASTM 2618-13 is not proposed. EPA has solicited comment on use of ASTM E2618-13's Annex A2 for hydronic heaters with partial thermal storage, but it has not proposed its use at this time.

- i. *EPA Must Use ASTM E2618-13 Annex A2 Instead of the Proposed BNL Method.*

ASTM E2618-13 Annex A2 is a newly-developed method intended specifically for testing of partial thermal storage units. It was issued late in 2013, at the same time as ASTM's revisions to ASTM E2618. Annex A2 reflects the state of the art with respect to testing partial thermal storage models. Inexplicably, the proposed rule instead embraces the BNL Method—a method developed in parallel with ASTM 2618 Annex A2 by personnel at the Brookhaven National Laboratory who also were participants in the ASTM work group that developed ASTM 2618, Annex A2. The two parallel proceedings were remarkably different in one key respect: the ASTM proceeding was completely transparent, as required by ASTM; it was open to

¹⁴⁴ See *Portland Cement Ass'n*, 486 F.2d at 396.

participation by all stakeholders (including EPA and states),¹⁴⁵ with all drafts and supporting data shared with everyone, and the outcome determined by the time-honored ASTM consensus process, which requires full attention to minority views, with full accountability for any failures to meet these requirements. The Brookhaven National Laboratory proceeding, in stark contrast, was conducted completely behind closed doors, with no transparency, no involvement by other stakeholders, and no provisions for consideration, much less rigorous attention to, dissenting opinions. However, given the Brookhaven National Laboratory's involvement in the ASTM process, it is perhaps unsurprising that the BNL method misappropriates (without attribution to ASTM) significant parts of the ASTM method. In essence, the BNL Method “cherry-picks” from ASTM E2618 Annex A2 (and EPA Method 28 WHH), resulting in a method that deviates from Annex A2 in several important ways, including:

- Fuel moisture content specifications: The BNL Method departs from the ASTM moisture content measurement process, and provides no actual determination of the moisture content of the fuel burned. By contrast, Annex A2 employs a detailed moisture content determination procedure, including multiple measurements of each fuel piece at different locations with a calibrated electronic moisture meter.
- Test fuel specifications: The BNL Method contains various test fuel specifications, including a requirement that fuel length be 80% of the firebox depth. The ASTM method does not contain this specification and, in fact, such a specification conflicts with the cross sectional dimensions and weights specified in CSA B415.1, which contemplates piece lengths of 16 to 24 inches.
- Scale specification: The BNL Method requires use of a platform scale for weighing of the unit to an accuracy of ± 1.0 pound (± 0.5 kg) and a readout resolution of ± 0.2 pound (± 0.1 kg). Annex A2 contains no such requirement, given the absence of scales that can support the weight of partial thermal storage units at any anything approaching a 0.2 lb level of resolution.
- Filter changes: The BNL Method requires filter changes at the end of the startup phase and steady state phase of operation, thereby dividing emissions measurement into three separate phases. Annex A2 and other related test methods do not contemplate any such phased process, and instead sample emissions throughout the test process using one filter set.
- Test equipment specifications: The ASTM method incorporates a heat exchanger and expansion tank on the scale so as to ensure that the appliance and all water contained can remain on the scale at all times. The BNL Method takes a different approach, in which the heat storage tank and expansion tank are isolated from the appliance weight scale, but the water in the system is not. Under the latter approach, volume of water changes due to

¹⁴⁵ Indeed, there was robust participation by both EPA and some states in the ASTM E2618-13 Annex A2 proceedings. The Brookhaven National Laboratory, moreover, listened in on almost every Annex A2 meeting but offered very little input.

temperature changes will appear as a weight change on the scale that is indistinguishable from weight changes due to fuel consumption.

- Heat output capacity validation procedures: The proposed rule reflects deviation from the ASTM heat output capacity validation procedures, as discussed above at Part V.C.2.c, *supra*, regarding cycling units. In addition to the specific deviations discussed above, the BNL Method’s heat output capacity validation procedures includes an ambiguous alternative procedure under which, if the rated output cannot be maintained for a 15 minute interval during the Category IV run, the manufacturer may elect to reduce rated output to match the test and complete the Category IV run on that basis. It is unclear, however, what level of “reduced rating” would be allowed (*i.e.*, is this based on the 15 minute interval, test run average?), and precisely what 15 minute interval is being referred to.

ii. *Use of the BNL Method Cannot be Supported Under NTTAA*

There is absolutely no basis for not using ASTM 2618 Annex A2 for testing partial thermal storage models.

First, there can be no question that the BNL Method is properly considered a “government-unique”¹⁴⁶ standard for purposes of NTTAA. The Brookhaven National Laboratory —author of the BNL Method—is a federal governmental entity.¹⁴⁷ It has a “.gov” web address that is “part of a Federal computer system used to accomplish Federal functions.”¹⁴⁸ The BNL Method moreover was specifically developed at EPA’s urging,¹⁴⁹ and now that it is complete, EPA has expressly adopted it as its own. The BNL Method, thus, qualifies as a government-unique standard, “developed by the government for its own uses.”¹⁵⁰ Because EPA has not shown that

¹⁴⁶ As discussed above, OMB Revised Circular A-119 requires agencies to use voluntary consensus standards in lieu of “government-unique” standards. NTTAA itself nowhere references use of “government-unique” standards – it simply requires agencies to use voluntary consensus standards, except where one of its two exceptions applies. *See* NTTAA § 12(d)(3). In HPBA’s view, *any* method or method component endorsed by EPA should, as a matter of law, be regarded as “government unique.” However, in the case of Brookhaven National Laboratory, EPA is endorsing a method developed by a Federal entity, so the BNL method is a “government unique” method, either way one looks at it.

¹⁴⁷ It is “[o]ne of ten national laboratories *overseen and primarily funded by the Office of Science of the U.S. Department of Energy (DOE).*” (emphasis added). *See* <http://www.bnl.gov/about/> (last visited Apr. 22, 2014).

¹⁴⁸ <http://www.bnl.gov/bnlweb/security-notice.php> (last visited Apr. 22, 2014).

¹⁴⁹ *See* <http://www.dec.ny.gov/chemical/89328.html> (The New York State Energy Research and Development Authority “was approached by the US EPA to provide financial support to BNL to develop an appropriate test method for [partial thermal storage wood heaters].”).

¹⁵⁰ Rev. Cir. A-119 § 4(b)(2).

either of NTTAA's exceptions applies with respect to use of Annex A2 and each of its method components, EPA cannot use the BNL Method or any of its specifications.

Second, excusing EPA from NTTAA compliance in this situation would set a dangerous precedent that would significantly undermine the purposes and objectives of NTTAA, if allowed to stand. Here, as discussed above, the BNL Method was developed behind closed doors in a non-transparent "shadow" process concurrent with the ASTM proceedings—in which the Brookhaven National Laboratory had actively participated. Surely we are not to read NTTAA as condoning such conduct, much less the blatant misappropriation of voluntary consensus standards and their component specifications. Ultimately, it should not matter where EPA's chosen method came from: a non-consensus method developed by *anyone* and expressly adopted by EPA must be a "government-unique" method if NTTAA is to mean anything at all.¹⁵¹

For these reasons, EPA's proposal to depart from ASTM E2618 Annex A2 in favor of Method 28 WHH crib testing at Step 1 and the BNL method at Step 2 in this rulemaking violates NTTAA. Moreover, putting aside NTTAA compliance issues, the Lab Coalition Comments provide numerous reasons why EPA's proposed departures are indefensible as a technical matter.

iii. Use of EN 303-05 Is Unwarranted

EPA requests comments on whether it should use EN 303-05 as a preferred reference test method or as acceptable emission testing alternatives for certification of hydronic heaters.¹⁵² EPA notes, however, that "[b]ecause EN 303-05 does not currently use heat storage during the certification test, if the EPA were to use EN 303-05 test results, the EPA would require the installed heater to have heat storage that can safely handle at least 60 percent of the maximum heat output of the heater or a greater level if the manufacturer specifies a greater level."¹⁵³ EPA also requests comments on the propriety of this heat storage level or other levels.¹⁵⁴

EPA cannot use EN 303-05 as a preferred reference test method. First, as a matter of NTTAA compliance, use of EN 303-05 in lieu of ASTM E2618-13 cannot be justified. As

¹⁵¹ There is also no basis under NTTAA or otherwise for EPA's Step 1 proposal to require testing of partial thermal storage heaters using cribs pursuant to EPA Method 28 WHH. Method 28 WHH is a method for the testing of cycling models; it does not apply to hydronic heaters with partial thermal storage. ASTM's Annex A2 to E2618-13 is the *only* voluntary consensus method for the testing hydronic heaters with partial thermal storage, and it specifies the use of cordwood (as does the BNL method, for that matter). Nor is this accidental: the ASTM subcommittee developing the method recognized early on that the downdraft designs used for PTS models simply won't run properly on cribs. In short, there is no crib-based method for the testing of partial thermal storage models. As such, crib testing of heaters with partial thermal storage under Step 1 is not only needlessly duplicative, but unsupported as a legal and technical matter.

¹⁵² See 79 Fed. Reg. at 6,345.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

discussed above, use of ASTM E2618-13 is neither contrary to law nor otherwise impractical (with the exception of its fuel specification). EN 303-05 is no more capable of overcoming NTTAA's hurdles than EPA's own proposed methods. Because the NTTAA exceptions do not apply, EPA must allow use of ASTM E2618-13.

NTTAA concerns aside, use of EN 303-05 is inconsistent with BSER and unsound from a technical standpoint. Unlike North American test methods such as Method 28 WHH and ASTM E2618-13, EN 303-05 does not require appliances to be tested under reasonably worst case test conditions that reflect consumer use patterns. In particular, the emissions profile from EN 303-05 overlooks common use patterns that result in high emissions (e.g., cold starts). Also, for partial thermal storage models, the EN 303-05 test method does not even include the heat storage tank in the testing apparatus. By not anticipating typical or worst case consumer use patterns, EN 303-05 does not adequately ensure that emissions from hydronic heaters will be at acceptable levels when those appliances are used in the real world. By failing to account for emissions under representative worst case operating conditions, use of EN 303-05, thus, thwarts meaningful evaluation of emissions performance capabilities consistent with BSER.¹⁵⁵

It is equally improper for EPA to propose to condition the use of EN 303-05 as a preferred reference method testing to models with external heat storage exceeding specified minimum levels. EPA cannot lawfully impose such a condition because it amounts to the promulgation of a design or equipment standard under CAA Section 111(h)—something EPA can only do upon a finding that “it is not feasible to prescribe or enforce a standard of performance.”¹⁵⁶ EPA's proposal of performance standards for hydronic heaters confirms that EPA has not (and cannot) make the threshold finding under Section 111(h) to establish the sort of design or equipment standard that it proposes here.

3. Hydronic Heaters with Full Thermal Storage Units

The proposed rule is especially unclear regarding test method requirements for hydronic heaters equipped with full thermal storage. The proposed rule appears to specify that such models are to be tested at Step 1 using the same test methods as models with partial thermal storage.¹⁵⁷ The proposed rule does not specify any test method for hydronic heaters with full thermal storage at Step 2/3. EPA's proposal is senseless. There is only one test method that has

¹⁵⁵ EPA cannot use EN303-05 as an alternative method, because such use requires a finding that the method yields results that are equivalent to the results derived from reference method testing. That finding clearly cannot be made for the many reasons specified in Part VII.B.1 of these comments.

¹⁵⁶ 42 U.S.C. § 7411(h)(1).

¹⁵⁷ Hydronic heaters with full thermal storage appear to be subject to the same dual testing requirements that apply to heaters with partial thermal storage at Step 1. That is, they must be (i) tested *with cribwood* as specified in Method 28 WHH and measure heat input and output according to ASTM 2618-13; and (ii) tested *with cordwood* as specified in EPA's Proposed PTS Method. It is inappropriate to use any of these test methods to test models with full thermal storage.

been developed for testing hydronic heaters with full thermal storage: ASTM E2618 Annex A1. EPA's failure to propose that method for full thermal storage models is indefensible under NTTAA. That method was developed under standard ASTM procedures with EPA's participation, and without any EPA objection. Thus, it is plainly a relevant voluntary consensus standard under NTTAA. There is no reason that use of Annex A1 would be contrary to law or otherwise impractical, and EPA has made no such finding.¹⁵⁸

d. Warm Air Furnaces

EPA has proposed to use the existing CSA method for warm air furnaces (CSA B415.1-10). HPBA supports EPA's proposal to use CSA B415.1-10 for warm air furnaces. That is the only existing method for testing of warm air furnaces at this time. As such, there can be no question, under NTTAA or otherwise, that this method should be applied for warm air furnaces in this rulemaking.

3. EPA's Proposed Compliance Algorithm is Not Defensible

For all appliance categories, during Step 2/3, EPA has proposed to use a unique compliance algorithm that focuses exclusively on burn rate Categories 1 and 4. Under that algorithm, manufacturers must first test those two burn rate categories and then retest two more times in whichever burn rate category is worse from an emissions standpoint.¹⁵⁹ This algorithm thus departs from the compliance algorithm and weighted averages set forth in the various consensus-based methods discussed above. EPA has improperly failed to justify those departures, as it is required to do under NTTAA, and for this reason alone, its new compliance algorithm cannot be adopted, for any appliance category.

On the merits, the fundamental problem here is not a new one: EPA is proposing to set standards based on data developed with one set of methods, and then require compliance determinations with a wholly new and different method. The test method, after all, is more than just the procedures for running appliances during testing and for generating quantitative particulate data. The test method also includes the number of data sets that must be generated, and, importantly, how those data are aggregated for compliance determinations. What EPA is proposing to do here is to radically change gears on how much data is required for compliance determinations, and how those data will be aggregated. As pointed out numerous time before in these comments, it was long ago concluded that requiring compliance to be determined with a method significantly different from the methods used to generate the data used for standard-setting is unlawful under the Clean Air Act.¹⁶⁰

¹⁵⁸ EPA's solitary reference to Annex A1 in the proposed rule and preamble is found in a parenthetical acknowledging ASTM's development of Annex A1 (mistakenly referred to as Annex X1) "for testing of models that have 'full' heat storage that can safely accept the heat from the full load of fuel." 79 Fed Reg. at 6,345.

¹⁵⁹ See Proposed §§ 60.534(a)(3), 60.5476(b), 60.5476(c).

¹⁶⁰ See *Portland Cement Ass'n*, 486 F.2d at 396; see also Section III(A)(1), *supra*.

On its face, EPA's proposal seems fairly straightforward and unobjectionable. What could be wrong with requiring more runs at the burn rate that produces the worst emission performance? The fundamental problem, however, is that none of the current test methods require such data to be generated. Thus, requiring more runs in this manner is a step into the unknown that will put in high relief the implications of the poor precision for hearth appliance test methods, as well as put all of the inherent risk in this approach on the industry's shoulders. This is shown by the attached comprehensive assessment of the EPA proposal, using the sophisticated statistical modeling approach called "Monte Carlo" analysis, with woodstoves being the test case (the "MCA Report").¹⁶¹

The MCA Report demonstrates conclusively that EPA's proposed approach would place an extraordinary degree of risk on manufacturers and may render compliance with EPA's proposed standards nearly impossible on any reliable basis. In particular, existing woodstove data reflects that most models have variable emissions performance profiles, with better performance more frequently focused at lower burn rates. This is because manufacturers have often found it necessary to sacrifice performance at the highest burn rates for better performance at lower burn rates that are more heavily weighted under existing Subpart AAA. By switching to EPA's new compliance algorithm, existing data shows that there will be a profound negative impact on manufacturers' ability to achieve compliance. The MCA Report confirms that the impact of the new compliance algorithm would be devastating. The risk of failure is so high that it may effectively drive most manufacturers out of the market. Although the aforementioned Monte Carlo analysis focuses on woodstoves, the findings and conclusions in that report apply with equal force to other appliance categories.

For all appliance categories, it is not possible to ensure high levels of confidence that compliant products will pass and non-compliant products will fail, given the poor precision of the applicable test methods.¹⁶² This problem is exponentially aggravated by EPA's proposed new compliance algorithm. EPA must address the risks associated with test method variability and balance potential emissions measurement impacts with economic impacts to manufacturers. The new compliance algorithm fails to do either and makes the determination of compliance increasingly a matter of random chance. As such, even if its implementation was not blocked by NTTAA, EPA would be precluded from adopting it because it undercuts any finding that EPA's proposed standards have been "adequately demonstrated" to be achievable on any reliable basis.

¹⁶¹ We are providing the MCA Report as Attachment 1 to these comments.

¹⁶² The Curkeet Ferguson paper establishes the poor precision of the woodstove test methods and attributes it predominantly to the inherent variability in burning wood. For this reason, similar poor precision is anticipated for the test methods for other appliance categories. If anything, precision is likely to be poorer for test methods requiring heat output determinations in addition to particulate measurements. This is particularly true for warm air furnaces, which require heat output determinations to be made in air plenums, a difficult environment for making them.

VI. COMMENTS ON PROPOSED WOODSTOVE STANDARDS

HPBA supports EPA's efforts to update the existing hearth appliance NSPS for woodstoves, found at Subpart AAA. Having given thoughtful consideration to the proposed rule, HPBA has concluded that the proposed rule's contemplated Step 1 limit of 4.5 g/hr is reasonable and appropriate, establishes a standard consistent with existing, rigorous state requirements, and is consistent with what has been adequately demonstrated as achievable on a reliable basis, after consideration of costs and other relevant factors. HPBA cannot, however, support many of the other requirements relating to the proposed Step 1 limit. Furthermore, HPBA strongly opposes EPA's proposed limits beyond Step 1. Those limits cannot be justified as BSER, and will generate nothing but a meaningless numbers game. Thus, for the reasons discussed below, EPA must revisit and withdraw its proposed Step 2 and 3 limits, and in their place adopt a scheme under the statute's "innovative technology waiver" provision that will build a needed bridge to a new paradigm—standards based on testing with cordwood under conditions reasonably representative of likely consumer use patterns.

SUMMARY OF EPA'S PROPOSAL

The proposed rule contemplates a single set of performance standards for all room heaters, a category that includes woodstoves, pellet stoves, and utility heaters. The standards would be phased in over time, through either a two- or three-step process. At the first step, applicable as of the effective date of the final rule, all woodstoves would be required to satisfy a 4.5 g/hr emission limit. Depending on whether EPA adopts a two- or three-step approach, woodstoves would be subject to a 1.3 g/hr limit either five or eight years later.¹⁶³ Under the alternative three-step approach, manufacturers would be subject to a 2.5 g/hr emission limit three years after the effective date of the final rule.

The proposed rule requires use of several test methods to determine compliance with the standards and requirements for certification. For all steps, EPA has proposed to use ASTM E2515 (dilution tunnel method) to measure emission concentrations and CSA B415.1-10 (stack loss efficiency method) to measure efficiency and carbon monoxide output. During Step 1, EPA has proposed to use EPA Method 28R of Appendix A-8 for both cribwood and cordwood testing. Manufacturers must test using both fuel types,¹⁶⁴ though they have the option of submitting the results of either testing for certification compliance.

¹⁶³ EPA's preferred approach under the proposal is the two-phased option, with the 4.5 g/hr and 1.3 g/hr limits termed "Step 1" and "Step 2" respectively. Under the alternative three-phased approach, the 1.3 g/hr limit becomes "Step 3," and intermediate 2.5 g/hr limit becomes "Step 2." See 79 Fed. Reg. at 6,339. References to "Step 2 and 3" throughout these woodstove comments refer to both the 2.5 g/hr and 1.3 g/hr standard. References to "Step 3" and "Step 2/3" both refer to EPA's proposed final 1.3 g/hr standard.

¹⁶⁴ 79 Fed. Reg. at 6,340; see also *id.* at 6,343 ("We propose to require two Step 1 tests, one using cribwood and one using cordwood and reasonable additional non-binding tests with a range of fuels for which the appliance is designed for warranted and/or advertised operation."). EPA provides little explanation of when and what "additional non-binding tests with a range of (Continued...)"

During Step 2/3, EPA has also proposed to use Method 28R of Appendix A-8, but it is requiring manufacturers to test and certify compliance based on cordwood alone.¹⁶⁵

OVERVIEW OF KEY HPBA COMMENTS

Step 1

- EPA's proposed Step 1 limit of 4.5 g/hr satisfies the requirements of CAA Section 111.
- HPBA supports EPA's proposal to use ASTM E2515 to measure emission concentrations and CSA B415.1-10 to measure efficiency and carbon monoxide output. HPBA, however, opposes EPA's proposal to use EPA Method 28R to conduct cribwood and cordwood testing as contrary to the National Technology Transfer and Advancement Act of 1995 ("NTTAA") and technically unsound. HPBA also opposes EPA's proposed requirement that manufacturers test appliances during Step 1 using both cribwood and cordwood. This requirement is unduly costly and burdensome and would further strain test laboratories' already limited capacity.

Steps 2 and 3

- EPA's proposed Step 2 and 3 standards are fundamentally incompatible with CAA Section 111's requirement that standards be "adequately demonstrated."
 - The proposed limits do not adequately account for substantial imprecision and other uncertainties in the test methods used to determine compliance with the emission limits. EPA's own data establish that the precision of woodstove test methods will not allow meaningful distinction between models that achieve certification scores within the range of interest here (1.3-4.5 g/hr).
 - Relevant data reveal that certification test scores based on laboratory data using dimensional lumber Douglas fir cribs for fuel are not reliable predictors of emissions performance in homes burning cordwood in "real world" installations (implicating

fuels for which the appliance is designed" would be necessary. The preamble states only that emissions may vary based on a variety of operating factors, and that such additional testing "would help assure consumers, neighbors and other stakeholders that the appliances perform as well on all manufacturer-listed fuels and operating scenarios as they do for the EPA laboratory test scenarios." *Id.* at 6,343.

¹⁶⁵ EPA does not specify the point at which it would require cordwood-based certification under its alternative three-step proposal (*i.e.*, whether at Step 2 or Step 3). In any case, HPBA remains adamantly opposed to any mandatory cordwood testing and certification requirements at any stage. HPBA does support ongoing efforts to develop a robust cordwood test method that reflects homeowner use practices, as well as potential alternative voluntary mechanisms by which manufacturers could demonstrate compliance on the basis of cordwood testing. *See* Part VI.C.1, *infra*.

different and varying flue draft conditions as an example). Thus, lower emissions limits are not likely to translate to lower emissions from new woodstoves when installed and operated in American homes.

- EPA’s proposed Step 2 and 3 standards do not reflect a rigorous consideration of costs and are not cost-effective.
 - EPA’s overly stringent proposed Step 2 and 3 emission limits are unsupported by their costs. HPBA’s own cost analyses render untenable the proposed rule’s contention that the standards are remotely cost-effective. The marginal additional emissions purportedly captured through lowering the standards to the 2.5 g/hr or 1.3 g/hr level require costs that are unreasonably high, assuming that the reductions are even real in the lab and translate to emission reductions in the field —assumptions that are not supportable.
 - Importantly, the industry—a consumer product industry concededly unlike others regulated under Section 111—involves many truly small companies, for whom these additional costs could prove fatal to business survival.
- The higher costs to manufacturers implicated by the proposed Step 2 and 3 standards will drive up woodstove prices. More than 6 million high-emitting, pre-NSPS stoves remain in American homes and continue to drive the lion’s share of the emissions from this source category. Price increases due to EPA’s proposed Step 2 and 3 standards will slow down the pace at which these existing woodstoves will be retired and “changed-out” for NSPS-certified appliances. The additional emissions generated due to slowing down the pace of change-outs are a significant and legally relevant environmental cost of the proposed standards that demands EPA’s attention. Indeed, the “best *system* of emission reduction,” properly construed, is one that marries available technology with appropriate incentives for the change-out of uncertified woodstoves. The presently proposed Step 2 and 3 limits do not reflect such a system. EPA’s failure to consider the change-out issue is yet another reason why EPA’s proposed Step 2 and Step 3 standards are both out of synch with Section 111 and also would create unnecessary obstacles to the very end they are meant to achieve – improved air quality.
- EPA cannot mandate cordwood testing alone at Step 2/3. It is premature to set standards for cordwood performance before data have even begun to be generated from cordwood testing using the relevant test method. Imposing cordwood-based emission limits prior to the generation of relevant data renders the Step 2/3 limits *un*-demonstrated under CAA Section 111.
- EPA must ensure adequate transition provisions in its final rule. In doing so, EPA must retain its proposal to allow currently certified woodstoves to retain coverage under current Subpart AAA standards for the full life of their existing certificates, or until revocation (whichever is earlier). In addition, EPA must significantly expand the proposed six-month sell-through period for units already in channels of trade on the effective date of the revised regulations.

A. EPA’S PROPOSED STEP 1 STANDARD IS APPROPRIATE, BUT MANY OF ITS RELATED REQUIREMENTS NEED REVISION

HPBA believes that the proposed Step 1 limit of 4.5 g/hr meets the requirements of BSER, as it is consistent with what has been adequately demonstrated as achievable on a reliable basis, upon consideration of costs and other relevant factors. Additionally, HPBA agrees with and supports EPA’s proposed adoption of test methods developed by voluntary consensus standard-setting organizations like ASTM and the Canadian Standards Association (“CSA”) as fully consistent with NTTAA. Relevant methods include ASTM E2515 (dilution tunnel method) and CSA B415.1-10 (stack loss efficiency method), which have been incorporated into the proposed revisions to the woodstove NSPS. HPBA cannot, however, support EPA’s intended deviations from ASTM E2780 (standard test method for determining PM emissions from wood heaters – ASTM’s refinement of EPA Method 28) for the many reasons set forth in HPBA’s detailed comments on EPA’s proposed test methods and in the comments developed by the Lab Coalition, which HPBA supports. Among other significant concerns, the deviations would neutralize two changes to EPA Method 28 that were specifically designed to address longstanding and well-recognized problems in the Method 28 provisions prescribing how to determine the low burn rate for certification testing.

HPBA also opposes EPA’s proposal to require manufacturers to conduct both cribwood and cordwood testing at Step 1. Such a requirement imposes redundant and onerous costs that cannot be justified. Even assuming the appropriateness of a Step 1 scheme that would allow a manufacturer to elect to certify with either fuel, cordwood data are irrelevant to a manufacturer’s compliance demonstration, unless that manufacturer elects to certify with cordwood. And the same would be true for manufacturers who might elect to certify with cribwood. In either case, the cost of testing is at least doubled. The dual testing requirement would also exacerbate the existing “bandwidth” problems, *i.e.*, test laboratories’ already limited capacity, which is a major obstacle already to implementing the revised NSPS program. While the objective to shift toward a cordwood-based testing and certification paradigm is a reasonable long-term objective, there are substantially more measured and sensible ways of advancing this objective that better account for existing data deficiencies (for example, selective cordwood testing or CAA Section 111(j) waivers, as discussed below). By forcing a costly and unnecessary cordwood testing requirement immediately at Step 1, EPA unreasonably and unjustifiably jumps the gun. We also oppose that requirement under the Paperwork Reduction Act. *See* HPBA Paperwork Reduction Act Comments, Section IV.

B. EPA’S PROPOSED STEP 2 AND 3 STANDARDS DO NOT COMPORT WITH CAA SECTION 111

Neither the proposed 2.5 g/hr nor the proposed 1.3 g/hr emission limit meets the robust BSER requirements of Section 111. Because of the poor precision of the relevant test methods, there is insufficient evidence to support finding that these stringent standards can be reliably met. Likewise, because of the demonstrated lack of correlation between laboratory performance and field performance, there is insufficient evidence that they would bring about any meaningful emission reductions in homes. Moreover, even if the emission reductions that the proposed standards appear to offer were real, it has been shown that they are not even close to being cost-effective. Beyond that, they would clearly slow the change-out of high-emitting, pre-NSPS uncertified woodstoves, thus imposing needless and costly environmental impacts and inhibiting

change-outs—the most effective means of achieving further emissions reductions from this source category.

1. EPA Has Not Adequately Demonstrated that the Proposed Step 2 and 3 Standards Are BSER

EPA’s Step 2 and 3 standards do not meet the requirement that standards be “adequately demonstrated.” Those standards do not adequately account for substantial imprecision and other uncertainties in the test methods that EPA will use to determine compliance. Nor has EPA adequately addressed the fact that certification test scores based on laboratory crib wood testing are not representative of emissions performance in the real world, where consumers typically burn cordwood.

a. Test Method Imprecision Renders EPA Proposed Step 2 and 3 Limits Inconsistent with BSER.

Over the past 25 years since promulgation of the initial woodstove NSPS, industry, the accredited test labs and EPA have become very experienced with current test methods for evaluating woodstove performance. One of the important lessons learned is that these test methods are far less precise than originally thought. While EPA has attempted to minimize this issue, it has at least acknowledged in the preamble to the proposal that “the currently available laboratory proficiency test results cast some doubt on the reproducibility of test results at lower levels of the standard for the current EPA Test Method 28.”¹⁶⁶ This test method imprecision—among other things—renders EPA’s proposed Step 2 and 3 emission limits inconsistent with BSER.

1. Background on Test Methods and Previous Understanding of Variability

As discussed below, the current NSPS incorporates a number of test methods which operate to control various aspects of emissions performance testing of a woodstove in the lab. Existing test methods measure PM in smoke through use of a dilution tunnel (*e.g.*, Methods 5G1-3) or stack sampling (*e.g.*, Method 5H), and specify how a woodstove is to be operated so as to generate smoke in a reasonably consistent way while reflecting homeowner use patterns, for purposes of determining whether appliance models incorporate BSER (*e.g.*, Method 28). The operating specifications take into account a range of relevant factors, including a woodstove’s burn rate, type of fuel, and moisture content, and include data reduction formulas for yielding certification values. In broad summary, existing methods require either dilution tunnel or stack sampling, multiple test runs at certain specified burn rates, use of Douglas fir dimensional lumber cribs within specific moisture content ranges, and calculation of weighted averages based on performance at each of the specified burn rates.

The variability of the test methods (*i.e.*, their inability to reproduce results) has been an issue of ongoing concern and helps explain the original NSPS’s approach to certification ranking. In fact, concerns about variability were highlighted by one of the leading members of the negotiated

¹⁶⁶ 79 Fed. Reg. at 6,356.

rulemaking committee charged with developing the proposed rule. In a paper produced for the committee's consideration, Dr. Jay Shelton strongly cautioned that test method results would inevitably vary for a number of reasons, including difficult to control conditions affecting tests of the same stove at different laboratories, the range of permissible operating parameters under the test method, and, ultimately, "the inherent variability in . . . combustion . . . from test to test."¹⁶⁷ These concerns clearly influenced the outcome of the negotiations, particularly as they affected certification ranking. As recognized in the proposal for the current NSPS, "given the inherent variations in test results, providing comparative test results to the consumer could mislead consumers to make purchase judgments based upon small and, in reality, meaningless differences in numbers."¹⁶⁸ It was such "concerns regarding consumers being misled by specific numbers from a relatively imprecise test method" that led to the adoption of a graphical means of illustrating a certified woodstove's emissions performance using "blunt" arrows.¹⁶⁹

In promulgating the current NSPS, EPA expressly considered intra-laboratory variability (assumed to be +/- 1 g/hr) in determining the appropriate level of its standards.¹⁷⁰ To address the issue of precision of the test methods, the NSPS imposes on EPA an obligation to conduct a precision study that would evaluate the interlab component.¹⁷¹ However, EPA has never discharged its obligation to rigorously determine the intra-lab and inter-lab precision of its PM test methods through an open and transparent process.

2. Precision Analysis of EPA Woodstove Proficiency Test Data

One of the requirements of the current NSPS is that certification testing be done by accredited testing laboratories. In order to obtain and maintain accreditation, a lab must conduct proficiency testing on a stove model supplied by EPA. This proficiency test data is submitted to EPA and is publicly available. It consists of 84 four-run data sets, covering five woodstove models tested at 12 different laboratories, generated between 1987 and 2005.

Mr. Rick Curkeet and Mr. Robert Ferguson, two engineers with many years of experience with the EPA certification test methods,¹⁷² used the EPA proficiency test data to rigorously

¹⁶⁷ Dr. Jay Shelton, "Sources of Variability in Emissions Test Results" (Undated) [EPA-HQ-OAR-2009-0734-0263].

¹⁶⁸ 52 Fed. Reg. at 5,012.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at 5,010 ("[T]he intralab precision of the test method and procedure was taken into account in the establishment of the standards.").

¹⁷¹ *See id.* at 5,011; *see also* 53 Fed. Reg. at 5,871, 5,878 (regarding final 40 C.F.R. § 60.533(p)(4)(ii)(B)) (requiring EPA to publish a decision as to the overall precision of the test methods and procedures and to amend the provisions of Subpart AAA, as necessary).

¹⁷² Mr. Curkeet, PE is Chief Engineer for Building and Hearth Products at Intertek Testing Services NA, Inc. Mr. Curkeet has over 30 years of experience in third-party testing and certification practices for a range of appliances, along with expertise in mathematics, probability and statistics, and physics and chemistry. Mr. Curkeet has participated in the development of (Continued...)

assess the precision of EPA’s woodstove test methods.¹⁷³ “Precision,” defined as “[t]he closeness of agreement between independent test results obtained under stipulated conditions,” collectively refers to two specific types of uncertainty in a set of data: repeatability and reproducibility.¹⁷⁴ Repeatability measures the closeness of agreement between test results as to the same appliance operating under the same conditions with the same equipment and operator (*i.e.*, at the same laboratory).¹⁷⁵ Reproducibility measures the closeness of agreement between test results as to the same (or presumed identical) appliances tested at a different laboratory, by different equipment and operators.¹⁷⁶ Accurately quantifying precision is crucial to meaningfully understanding any given set of PM emissions test results and broadly assessing the performance capabilities of woodstoves generally.

Relying on the EPA proficiency test data described above, Curkeet Ferguson analyzed both the repeatability and reproducibility of existing wood stove test methods, ultimately revealing significant levels of imprecision for both metrics. As discussed further below, standard-setting that does not adequately take into account this imprecision fails to satisfy CAA Section 111 requirements.

Applying the analytical procedures contained in ASTM E691,¹⁷⁷ Curkeet Ferguson conducted a precision analysis of the weighted average emissions data for each of three models¹⁷⁸ at each lab for each test year.¹⁷⁹ This analysis confirmed the inherent variability in

various voluntary consensus, and has served as chair of the ASTM Subcommittee E06.54 on Solid Fuel Appliances. Mr. Ferguson is founder and president of Ferguson, Andors & Company, a product development and regulatory compliance consulting company. He has worked closely with HPBA and its member companies for decades on issues related to EPA’s hearth appliance NSPS. He is also an active member of ASTM, having chaired or facilitated the development of numerous ASTM test methods of relevance to the hearth appliance industry.

¹⁷³ See Curkeet Ferguson, *supra* n.10.

¹⁷⁴ *Id.* at 5.

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

¹⁷⁷ The ASTM E691 test program design elements were not relevant to Curkeet Ferguson’s analysis, since the EPA proficiency test program has been in place for over 20 years.

¹⁷⁸ The analysis evaluated proficiency test data for each stove with sufficient data for statistically meaningful evaluation. There was insufficient data for an ASTM analysis for two additional models.

¹⁷⁹ Curkeet Ferguson, *supra* n.10 at 7. Curkeet Ferguson also conducted a “macro” analysis of the proficiency test data. The “macro” analysis revealed that, at a 95% confidence level, the inter-lab reproducibility for any given woodstove is +/- 4.9 to 9.8 g/hr. *Id.* at 8. Even at a 68% confidence level, reproducibility still ranges from +/- 1.7 to 3.5 h/hr. *Id.* In other words, even at only a 68% confidence level, a woodstove model that ostensibly meets a 2.5 g/hr emissions limit at one lab might have results ranging up to 6 g/hr (and vice versa).

woodstove test data. Across various woodstove models, the best repeatability (intra-lab) measure was 2.9 g/hr (at a 95% confidence level), but the repeatability average for most models was approximately 3.5 to 5.4 g/hr.¹⁸⁰ The reproducibility assessment (to determine the ability to reproduce the same results using the same test methods at a different lab) determined that, at a 95% confidence level, results would range by 4.5 to 6.4 g/hr from lab to lab.¹⁸¹

Notably, both these ranges for repeatability and reproducibility significantly exceed the assumed intra-lab precision estimate of +/- 1 g/hr.¹⁸² This was one of the cornerstones of the analysis supporting the current NSPS. There can be no justification for failing to take this new understanding of a significantly higher level of imprecision into account in issuing revised standards. Yet the proposed rule only makes matters worse, severely ratcheting down the standards to levels at which compliance cannot be meaningfully determined.

The implications of the Curkeet Ferguson analysis are best illustrated by example: Assume a non-catalytic woodstove with a weighted average emission rate (generated in a single test series) of 1.3 g/hr (*i.e.*, the more stringent emissions limit on which comments were solicited). At the 95 percent confidence level, even the best repeatability measure reached was no better than approximately 3 g/hr. However, the worst repeatability measure at the 95 percent confidence level was 5.4 g/hr. Thus, we could not consider a second test result of the same appliance from the same lab with an emissions rate of 6.7 g/hr to be evidence of a difference in performance at a 95% confidence level. In other words, the test methods do not allow us to distinguish between certification test scores between 1.3 and 4.5 g/hr (the governing non-catalytic emission limit under Washington State standards, and proposed Step 1 standard). Indeed, a repeatability estimate of 5.4 g/hr means that a woodstove with a measured emission rate of 1.3 g/hr might really be no different than one with a measured emission rate more than five times that level.¹⁸³

Given the significant implications of the test data variability in standard-setting, Curkeet Ferguson evaluated a range of possible sources of uncertainty affecting the precision of the test results. The authors considered each of EPA emissions measurement methods (Methods 5G-1, 5G2, 5G-3, and 5H), and the various respective sources of uncertainty.¹⁸⁴ Based on their

¹⁸⁰ *Id.* at 14.

¹⁸¹ *Id.* The proposed rule preamble minimally acknowledges this analysis, noting that it “found that the repeatability and reproducibility of the current test method for wood heater emissions . . . may be poor” 79 Fed. Reg. at 6,356.

¹⁸² *See supra*, Part VI.B.1.a.1.

¹⁸³ Intertek’s comments on variability further demonstrate that statistical analysis cannot disprove the hypothesis that all certified woodstoves generally perform at about the same level, and that observed differences in emissions performance are a function of the random variability of wood burning. *See* Intertek Testing Services, NA Inc. Comment (Apr. 30, 2014) (filed under separate cover by Intertek) [to be docketed at EPA-HQ-OAR-2009-0734-****]; *see also* Rick Curkeet, *A Butterfly in the Room*, HEARTH & HOME (March 2011) [EPA-HQ-OAR-2209-0734-0265].

¹⁸⁴ Curkeet Ferguson, *supra* n. 10, at 14-15.

analysis, the authors concluded that “emission measurement test methods (EPA Methods 5G-1, 5G-2, 5G-3 and 5H) are not major contributors to the high overall variability being demonstrated in the data.”¹⁸⁵ Then the authors then considered whether further tightening of test method specifications in EPA Method 28 (*e.g.*, fuel moisture content and density parameters) would narrow the level of variability within labs and between labs.¹⁸⁶ The authors concluded from this analysis that the operational and fuel parameter tolerance range specifications for Method 28 “are not major contributors to the high variability” and that “tightening these parameters to improve test precision would simply increase costs and . . . not significantly improve precision.”¹⁸⁷ Having discounted various possible sources of uncertainty contributing to the demonstrated variability in results, the authors reached the following conclusion:

Variability in wood heater emission testing results for any given appliance is most likely a function of the random nature of burning wood, no matter how tightly you try to control the process. Many relatively small, uncontrollable variables that are inherent in the wood combustion process can combine to significantly affect the outcome of any given test.¹⁸⁸

The authors’ summary of the implications of their findings speaks for itself:

[T]he current testing process simply cannot consistently distinguish emissions performance differences of less than 3 to 6 grams per hour. The process is certainly capable of reliably distinguishing between good and bad performance, but it cannot reliably distinguish between “good, better and best” performance.¹⁸⁹

What this boils down to is that a single test series simply cannot provide a robust characterization of a woodstove’s performance in a laboratory setting. Nor would a multiple test series-based program that might generate more robust results be remotely affordable or practical. The unavoidable implication is that:

¹⁸⁵ *Id.* at 19. While emissions measurement methods are not a significant contributor to the high uncertainty in woodstove performance generally, Method 5H (stack sampling) is responsible for far more variability than the 5G dilution tunnel methods, and yields an unnecessary and unacceptable level of uncertainty. *See id.* at 14-15 (estimating Method 5H’s measurement uncertainty at +/- 20 to 30 percent of the total particulate mass determination, compared to +/- 2.5 to 3 percent for the 5G method). Such an excessive level of uncertainty is unnecessary and unacceptable, in light of the much higher precision of the 5G dilution tunnel methods. EPA is proposing to adopt ASTM E2515, the ASTM refinement/restatement of Method 5G-3, and to exclude 5H from the emissions measurement framework adopted in the final rule. The poor precision of Method 5H provides ample support for this decision.

¹⁸⁶ *Id.* at 16-19.

¹⁸⁷ *Id.* at 19.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

[r]atcheting down the limits in the new NSPS will only give the appearance of tighter limits. In reality it will simply make it much more difficult and more expensive to qualify new designs, and most likely give consumers fewer choices of more expensive products. This ultimately will make replacement of old dirty stoves less attractive.¹⁹⁰

3. Attempts to Write off Curkeet Ferguson Are Factually Flawed and Completely Unsupportable.

Given Curkeet Ferguson’s analysis, there can be no question as to the wide variability in the woodstove test data and its implications with respect to EPA’s standard-setting. Contrary statements and criticism from two sources—EPA and the Puget Sound Clean Air Agency—fail to resolve this fundamental problem.

EPA is quick to discount the Curkeet Ferguson analysis in its proposed rule. While EPA acknowledges Curkeet Ferguson’s findings—including repeatability measures between 2.9 g/hr and 5.4 g/hr, and reproducibility measures of 4.5 g/hr to 6.5 g/hr—the proposed rule minimizes the significance of these findings based on presumed “mitigating factors.”¹⁹¹ In particular, EPA asserts that Curkeet Ferguson ignored:

- “the lack of regulatory requirements or incentives for the test laboratories to achieve highly reproducible results in proficiency testing . . .;” and
- “proposed changes to improve the repeatability and reproducibility of the test method.”¹⁹²

Neither of these criticisms can withstand scrutiny. As discussed in Intertek’s comments on the proposed rule,¹⁹³ the first of these assertions is an unfair and inaccurate general attack on the behavior and competency of EPA-approved test laboratories, and ignores that outliers in the test data were excluded from the Curkeet Ferguson precision analysis. The second assertion relies on the mistaken assumption that EPA’s proposed “improvements” meaningfully address the existing precision issues, an assumption that the Lab Coalition comments definitely refute.¹⁹⁴ Neither of these assertions mitigates the concerns identified by Curkeet Ferguson.¹⁹⁵

Nor does criticism from the Puget Sound Clean Air Agency (“PSCAA”) hold water. In December 2012, the PSCAA wrote Stephan D. Page, Director of EPA Office of Air Quality Planning Standards, offering a detailed statistical critique of the Curkeet Ferguson analysis.

¹⁹⁰ Curkeet, *A Butterfly in the Room*, *supra* n.183.

¹⁹¹ 79 Fed. Reg. at 6,356.

¹⁹² *Id.*

¹⁹³ See Intertek Testing Services, NA Inc. Comment on Variability at 3, *supra* n.183.

¹⁹⁴ See generally Lab Coalition Comments, *supra* n.97 (comment on proficiency test program proposal).

¹⁹⁵ See Intertek Testing Services, NA Inc. Comment on Variability, *supra* n.183.

A full discussion of the flaws in the PSCAA’s critique appears in Mr. Curkeet’s response that is attached, and will not be repeated here.¹⁹⁶

There are two very basic problems with the critique, however, that warrant emphasis: First, the PSCAA’s various complaints about Curkeet Ferguson’s analytical approach ignore the fact that they applied the standard consensus-based procedure for evaluating precision, *i.e.*, ASTM method E691-09 (“Standard Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method.”). In addition, Curkeet Ferguson relied on EPA’s own data—data obtained through the EPA Wood Stove Emissions proficiency test program. While this data set may not be perfect – indeed, none is apt to be so—this data “is certainly adequate to indicate that variability in test results is a very significant issue.”¹⁹⁷ PSCAA’s attempt to fault HPBA for what it perceives as flaws in ASTM’s standard procedure for evaluating test method precision—one developed through ASTM’s consensus-based process for cross-industry, broad application—is clearly inappropriate.

b. Certification Test Scores Generated in the Laboratory Do Not Correlate with Field Performance of Certified Appliances

Even if precision of the laboratory methods used for certification was not an issue (and it is), rankings among certified appliances based on certification scores fail to provide a reliable indication of a woodstove’s performance in the field relative to other certified woodstoves. This is because certification tests are conducted under conditions that do not correlate with the real world use of woodstoves by homeowners.

The disconnect between lab and field performance of certified woodstoves isn’t a new insight. As EPA noted in the preamble to the proposal of the current rule, “[e]missions from a wood heater depend as much upon how the owner operates it as upon its design.”¹⁹⁸ To highlight just a few of the clear differences between laboratory testing conditions and field use, Method 28 testing requires use of Douglas fir cribs, while homeowners use cordwood. And Method 28 sampling creates different draft dynamics in comparison to real world installations. In the laboratory tests considerable attention is paid to start-up conditions at the fuel loading stage including size and character of an established coal bed and timing of setting air controls and closing the firebox door. These conditions are highly unlikely to be regularly or predictably reproduced by consumers in the field, but can make a substantial difference in emissions performance in the laboratory.¹⁹⁹

¹⁹⁶ Rick Curkeet, PE, “Response to Puget Sound Clean Air Agency ‘Preliminary Review of Analysis of NSPS Test Method Variability (Curkeet, 2010)’ (Dr. Phil Swartzendruber, 2012)” (undated) (Attachment 9 to these comments).

¹⁹⁷ *Id.* at 1.

¹⁹⁸ 52 Fed. Reg. at 5,007.

¹⁹⁹ Notably, state stakeholders in this rulemaking have also long recognized the discrepancy between field and laboratory emissions performance, and have pressed for the development of methods to better reflect real-world consumer use and performance. If there were ever any doubt (Continued...)

The reason for these differences lies in the overall approach to testing and certification taken in the current NSPS. That approach uses a laboratory testing scheme to differentiate between appliances that employ BSER and those that do not—not to predict their field performance, and only to rank certified appliances *after* taking precision into account. Ironically, the decision to use Douglas fir cribs as part of that scheme was in order to improve the reproducibility of the test method results. It was recognized that this and other components of the required test methods were departures from real world conditions, and that the results from certification testing would not correlate with real world performance.²⁰⁰ But since the purpose of testing under the current NSPS was to index BSER, not to replicate real world performance, these differences were considered irrelevant.

The negotiated rulemaking record further reflects the original NSPS drafters’ understanding that using certification tests as a tool for predicting field performance (or making close determinations of compliance) would be an unrealistic and fruitless endeavor. In his paper on variability, Dr. Shelton explained among other things that “use and natural aging” of stoves in the field might affect emissions “by at least a factor of two[,]” while inherent and largely uncontrollable woodstove performance variability might be responsible for some 20% of variability in results from test to test.²⁰¹ Dr. Shelton’s well-received admonition to the committee as to overconfidence in laboratory test results remains just as resonant today. History only confirms his assessment of variability, and, if anything, recent analysis suggests that the differential between laboratory and field performance may extend even beyond that originally suspected.

To help lay a foundation for EPA’s efforts to revise the woodstove NSPS, HPBA commissioned Dr. James Houck to review the available studies to provide additional insights into the relationship between lab and field performance for certified appliances, as well as the field performance of certified appliances compared to uncertified appliances.²⁰² Houck’s study

as to this issue, one only needs to look at the video from the Colville, Washington demonstration project (*see* HPBA Presentation, “Proposed Revisions to the NSPS for Residential Wood Heaters – Industry Perspective” (Oct. 2012), at Slide 33, included on the DVD submitted by HPBA to EPA on April 30, 2014, a copy of which appears at EPA-HQ-OAR-2009-0734-0270). That video shows the striking differences in opacity between identical stoves running simultaneously, each using EPA Method 28, one fueled with cordwood and the other with cribs.

²⁰⁰ *See, e.g.*, 52 Fed. Reg. at 5,001 (“Although no standardized wood load configuration and procedure is representative of individual consumer cordwood burning practices, the Oregon loading density falls within the range shown by the studies.”).

²⁰¹ Shelton, *supra* n.167, at 2-3.

²⁰² *See* James E. Houck, Ph.D., A COMPARISON OF PARTICULATE EMISSION RATES FROM THE IN-HOME USE OF CERTIFIED WOOD STOVE MODELS WITH U.S. EPA EMISSION VALUES AND A COMPARISON BETWEEN IN-HOME UNCERTIFIED AND CERTIFIED WOOD STOVE PARTICULATE EMISSIONS (2012) [EPA-HQ-OAR-2009-0734-0143] (“Houck 2”). Dr. Houck has more than 30 years of experience as a consultant and scientist, with over 20 years of specialized experience in biomass combustion and residential heating research and consulting. He has worked for a broad (Continued...)

relied on emissions data from in-home sampling programs and laboratory studies designed to reflect homeowner use patterns more closely than EPA Method 28.²⁰³ These emissions data were compared to published certification scores for the woodstove models in question.²⁰⁴ Houck also compiled field emissions data for uncertified models. In total, 618 emissions measurements were analyzed, including 409 tests from 85 certified woodstoves representing 41 different models.²⁰⁵

Houck’s analysis revealed that rank orders of woodstoves based on their certification scores did not predict rank orders for the same woodstoves based on their field performance: woodstoves with low certification scores sometimes performed more poorly in the field than woodstoves with higher certification scores, and vice versa. In an attempt to “mitigate” (smooth) the impact of the factors influencing emissions variability (e.g., wood moisture, chimney draft conditions, stove condition), the study grouped appliances in categories determined by their certification results and developed emissions means and medians for the field and field simulation data for each category.²⁰⁶ This analysis revealed *no* significant correlation between emissions levels in the field and certification ranking. In fact, certified woodstoves with the lowest certification values (< 3 g/hr) reviewed in the study yielded the highest field mean emissions rates and emission factors of the three categories of certified woodstoves, including those with the highest certification values (> 5 g/hr).²⁰⁷ Based on these data, Houck ultimately concluded that “U.S. EPA certification values are not good predictors of the relative ranking of emissions from individual models or the actual magnitude of their emissions.”²⁰⁸

1. HPBA’s Response to the Critiques of Houck 2

In addition to its critique of Curkeet Ferguson, PSCAA also critiqued Houck 2. Its criticisms of this study are equally unsupported for the many reasons discussed in Dr. Houck’s response, which is attached to these comments.²⁰⁹ That response speaks for itself, and will not be summarized in detail here. However, two of Dr. Houck’s key points deserve to be highlighted. First, he correctly points out that PSCAA uses statistical analysis to critique the study, but

range of stakeholders, including manufacturers, trade organizations, air quality regulatory agencies (including EPA), and energy agencies. He is also the author of more than 130 reports and publications on residential heating issues.

²⁰³ *Id.* at ii.

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.* at 3.

²⁰⁷ *Id.* at 3, 19-20.

²⁰⁸ *Id.* at 2.

²⁰⁹ James E. Houck, Ph.D., “Review of the Puget Sound Clean Air Agency December 5, 2012 letter to Mr. Stephan D. Page of the Office of Air Quality Planning and Standards U.S. Environmental Protection Agency” (Apr. 3, 2013) (Attachment 10 to these comments).

statistical tools cannot be appropriately used here because of the many dissimilar studies that comprise the data base that Dr. Houck analyzed. Moreover, to the extent the PSCAA letter insinuates that the Houck study reflects industry bias, it ignores that the data on which the study relied (1) have been obtained from research funded or co-funded by EPA, (2) are in EPA's database via the NSPS process, or (3) are in the public domain and available to EPA staff. Ultimately, the PSCAA critique offers no data or additional information that would contradict his analysis (or that of Curkeet Ferguson for that matter), or change the conclusions reached.

2. EPA's Failure to Address Houck 2

EPA, on the other hand, does not even discuss, much less attempt to dispute, Dr. Houck's findings on the inability of certification test scores to predict performance in the field. This is not for a lack of awareness; as noted, the study was conducted for the express purpose of helping provide a foundation for EPA's revision of the woodstove NSPS. Toward this end, EPA was provided with Houck 2 well over a year prior to the proposed rule's issuance. EPA's failure to even address this issue of obvious relevance to the level of its proposed Step 2 and 3 standards is particularly egregious, and ignores basic EPA policies and guidance requiring use of the best available, "highest quality" science and information.²¹⁰ EPA must rectify this oversight.

In the end, there can be no denying the obvious—that laboratory certification test scores cannot be used to predict the relative performance of certified models in the field, because the rank order of certified appliances based on certification test scores will not hold up in the field. Thus, a woodstove model with a certification value at or below 2.5 g/hr (or even 1.3 g/hr) may not perform as well in the field as a model with a certification score of 4.5 g/hr. Given this, it cannot be said that EPA's proposed Step 2 and 3 emission limits have been "adequately demonstrated."

2. EPA Failed to Properly Analyze Costs, and the Proposed Step 2 and 3 Standards Are Not Cost-Effective

As discussed previously, the costs and cost-effectiveness of proposed emission standards are a central factor in determining BSER, pursuant to the CAA Section 111 requirement that EPA must consider "the cost of achieving such reduction and any non-air quality health and environmental impacts and energy requirements."²¹¹ EPA is required to ensure that its woodstove NSPS limits are not "exorbitantly costly in an economic or environmental way."²¹²

The current NSPS proposal does not adequately consider the significant costs of achieving emissions reductions with so low a ceiling on emissions from woodstoves. The proposed Step 2 and 3 emission limits would lead to costs that are anything but reasonable, EPA's protestations to the contrary notwithstanding. This conclusion is supported by a separate cost-effectiveness

²¹⁰ See, e.g., U.S. EPA, Scientific Integrity Policy, at 3, available at http://www.epa.gov/osa/pdfs/epa_scientific_integrity_policy_20120115.pdf.

²¹¹ 42 U.S.C. § 7411(a)(1).

²¹² *Essex Chem. Corp.*, 486 F.2d at 433.

analysis by NERA, HPBA's third-party consultant (Attachment 2 to these comments and summarized below), and by NERA's critique of EPA's cost and cost-effectiveness analysis (Attachment 11 to these comments and summarized below).²¹³ The analysis described therein clearly demonstrates that cost considerations preclude implementation of EPA's current proposal as BSER and that EPA's own cost-effectiveness analysis does not have legs to stand on. Rather than attempt to recreate NERA's analyses here, we will instead briefly summarize the key findings below.

a. EPA's Analyses Are Fatally Flawed

EPA and its consultants performed various calculations related to compliance costs and emissions reductions for the proposed and alternative regulatory approaches for the various categories of hearth appliances. EPA's methodology for its regulatory impact analysis failed in a number of ways to follow governing EPA guidance.

In conducting its cost-effectiveness analysis, EPA departed from its own guidance (*Guidelines for Preparing Economic Analyses*²¹⁴). The major deficiencies are illustrated in the following table and discussed in more detail in NERA's report:²¹⁵

²¹³ NERA "combines the largest in-house team of economists in the economic consulting world with an extensive network of some of the leading academic and industry experts in their fields." "NERA's Global Services and Capabilities," http://www.nera.com/67_5160.htm. In the area of environmental economics, NERA has broad experience in numerous fields working on behalf of both government entities and industry. See "Environmental Economics At A Glance," http://www.nera.com/67_4854.htm. Dr. David Harrison, Jr., lead investigator for the analysis, is Senior Vice President and the Global Environmental Group Co-Head at NERA, and has a PhD in economics from Harvard University, along with an MSc in economics from the London School of Economics and a BA in economics, *magna cum laude*, from Harvard College. Dr. Harrison has more than 30 years of experience in evaluating the costs and benefits of various air quality regulations across a range of industry sectors. He has led over two dozen economic impact assessments related to energy and environmental policies and infrastructure programs, relying on state-of-the-art economic models, and evaluating regions throughout the country and the world. Dr. Harrison previously was an Associate Professor at Harvard University's John F. Kennedy School of Government and also served as a Senior Staff Economist for the government's President's Council of Economic Advisors. See "Dr. David Harrison, Jr.," http://www.nera.com/Experts_expert41.htm.

²¹⁴ U.S. Environmental Protection Agency ("EPA"). 2010. *Guidelines for Preparing Economic Analyses*. December. [http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/\\$file/EE-0568-50.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf)

²¹⁵ In addition, EPA departed from its standard practice of basing cost-effectiveness values on a comparison of annualized costs and annual emission reductions in a single future year by including a cumulative assessment. See NERA Economic Consulting, *Assessment of EPA Economic Analyses for Proposed Wood Heater New Source Performance Standards*, at 4 (May 2014) (Attachment 11 to these comments). This unexplained departure is arbitrary and (Continued...)

Summary of NERA’s Assessment of EPA Analyses for Proposed Wood Heater NSPS Relative to EPA Guidelines for Preparing Economic Analyses

	EPA Performed for Proposed Wood Heater NSPS?	
Incremental Cost-Effectiveness Analysis		
1. Specify several options (at least one less stringent and one more stringent than proposal)	No	No option more stringent than Proposal; only difference between Proposal and Alt. is timing
2. Develop compliance cost estimates based on stringency	No	No dependence on stringency for most costs
3. Develop emission reduction estimates based on stringency	Yes, but...	No accounting for large emission uncertainty
4. Incorporate market impacts into cost and emission reduction estimates	No	No demand, scrappage, or cons. surplus effects
5. Calculate incremental costs (least to most stringent)	No	No incremental analysis for decision-making
6. Calculate incremental emission reductions (least to most stringent)	No	No incremental analysis for decision-making
7. Calculate incremental cost-effectiveness (least to most stringent)	No	No incremental analysis for decision-making
Industry Impact Analysis	No	No estimates of industry jobs, closures, etc.
Economic Impact Analysis	No	No estimates of economy-wide jobs, GDP, etc.

The shortcomings in EPA’s cost-effectiveness analysis are fatal flaws that make it essentially useless for decision-making. In fact, NERA concluded that the errors and omissions are so fundamental that it would not be worthwhile for NERA to attempt to develop incremental analyses from the information that EPA provides, because the information itself has such a shaky basis.

EPA’s proposal also gives short shrift to one of the major findings of EPA’s cost analysis militating against a determination of cost-effectiveness: a high cost-to-sales ratio. In the proposed rule preamble, EPA concedes that, for woodstoves, “the cost-to-sales ratio, which is an indicator of the ability of the manufacturer to successfully absorb the regulatory impacts, is high at 4.3 percent.”²¹⁶ However, the proposed rule glosses over this finding, ignoring EPA’s own recognition of its significance in the Regulatory Impact Analysis. There, EPA acknowledges that ratios below 1 percent “suggest the rule will not have a significant impact . . .”²¹⁷ For adjustable burn rate woodstoves, the cost-to-sales ratio was over 4 times this threshold value.

capricious. *See Fox Television Stations, Inc.*, 556 U.S. at 514-15 (agency may not “depart from a prior policy *sub silentio*” and “must show that there are good reasons for the new policy”).

²¹⁶ *Id.* at 6,356.

²¹⁷ U.S. EPA, *Regulatory Impact Analysis (RIA) for Proposed Residential Wood Heaters NSPS Revision: Final Report*, EPA/R-13-004 (2014) at 5-15 [EPA-HQ-OAR-2009-0734-0364] (“RIA”).

Such a high value at least should have given EPA pause as to the extreme nature of the costs associated with the proposed rule's Step 2 and 3 limits. In any case, and as NERA's analysis reveals, these costs are wholly out of proportion with the emissions actually captured under the proposed Step 2 and 3 standards.

b. NERA's Analysis Shows that EPA's Proposed Step 2 and 3 Standards Are Not Cost Effective

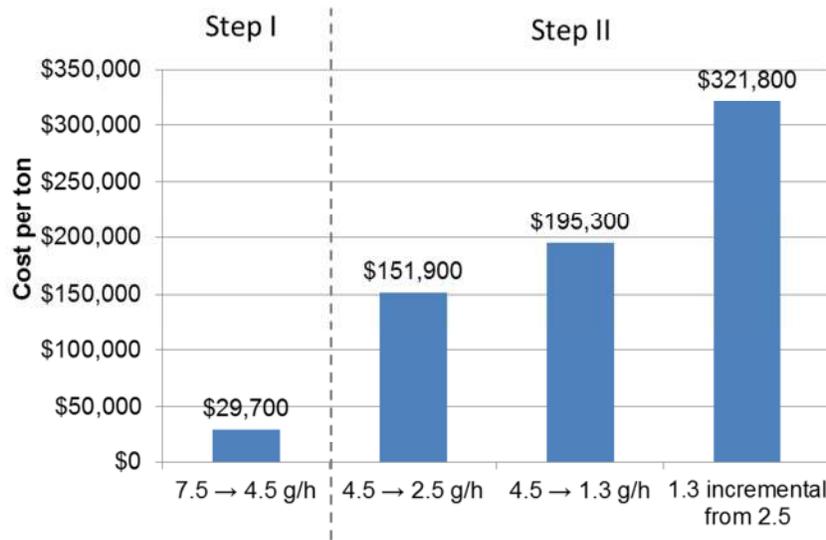
The full details on NERA's data inputs and methodology can be found in the appendices attached to their analysis, and we will not summarize those details here. In short, NERA evaluated the cost-effectiveness of increasingly stringent particulate matter emissions standards for woodstoves. Using detailed information on compliance costs and economic assessments consistent with EPA guidelines for economic analysis, NERA developed estimates of the incremental cost per ton for three NSPS.

1. Step 1 standard of 4.5 grams per hour (g/hr);
2. Step 2 standard of 2.5 g/hr; and
3. Step 2 standard of 1.3 g/hr.

The following figure summarizes the results of NERA's analysis. These results show that the two Step 2 standards are much less cost-effective than the Step 1 standard of 4.5 g/hr. The cost per ton for the Step 1 standard of 4.5 g/hr is \$29,700 per ton,²¹⁸ compared to \$151,900 per ton for the Step 2 standard of 2.5 g/hr or \$195,300 per ton for a Step 2 standard of 1.3 g/hr. Comparing the Step 2 options, a standard of 1.3 g/hr is particularly costly relative to emission gains over a 2.5 g/hr standard, resulting in an incremental cost per ton of \$321,800 per ton.

²¹⁸ HPBA recognizes that this cost per ton value is significantly higher than what is normally deemed acceptable in rulemakings to establish NSPS for PM. Nevertheless, the important consideration of building to a nationally uniform standard has already resulted in woodstove manufacturers largely accepting the Washington State standard of 4.5 g/hr as the national norm. Thus, HPBA supports EPA's conclusion that the Step 1 limit is BSER.

Cost-Effectiveness of Alternative Wood Stove NSPS



Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Woodstove New Source Performance Standards

NERA used sensitivity analysis to assess the implications of changing uncertain estimates used to calculate costs and annual emission reductions, including the underlying compliance cost information and the price elasticity of demand. Although the specific estimates of dollars per ton change under the sensitivity cases, none of the sensitivity cases modifies NERA’s basic conclusions, i.e., that the Step 1 standard of 4.5 g/hr is much more cost-effective than the Step 2 standards and that the 1.3 g/hr standard is particularly costly in terms of potential additional emission reductions relative to a somewhat less stringent Step 2 standard of 2.5 g/hr.

The following charts summarize the key details in NERA’s analysis:

NERA’s Estimated Impacts on Stove Sales and Annualized Social Costs

	STEP I		STEP II	
	7.5 → 4.5 g/h	4.5 → 2.5 g/h	4.5 → 1.3 g/h	1.3 incremental from 2.5
Sales with demand effect	85,600	68,300	58,500	N/A
Social cost				
Compliance cost	\$822,000	\$10,358,000	\$15,703,000	\$5,344,000
Consumer surplus deadweight loss	\$77,000	\$2,305,000	\$6,151,000	\$3,846,000
Total cost	\$899,000	\$12,664,000	\$21,854,000	\$9,190,000

Note: Baseline sales are 89,000.

Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Woodstove New Source Performance Standards

NERA’s Estimated Components of Annual Emission Reductions

	STEP I	STEP II		
	7.5 → 4.5 g/h	4.5 → 2.5 g/h	4.5 → 1.3 g/h	1.3 incremental from 2.5
Demand effect	-44	-133	-209	-76
Compliance effect	-29	-165	-239	-75
Scrappage effect	+43	+214	+337	+122
Net emissions change (tons)	-30	-83	-112	-29

Note: “Demand effect”: Higher woodstove prices would cause sales to fall, reducing emissions.
 “Compliance effect”: Modification of woodstoves to meet NSPS is assumed to reduce emissions.
 “Scrappage effect”: Reduced scrappage of existing woodstoves would increase emissions.

Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Woodstove New Source Performance Standards

NERA’s Estimated Incremental Cost-Effectiveness of NSPS

	STEP I	STEP II		
	7.5 → 4.5 g/h	4.5 → 2.5 g/h	4.5 → 1.3 g/h	1.3 incremental from 2.5
Total cost	\$899,000	\$12,664,000	\$21,854,000	\$9,190,000
Net emissions change (tons)	-30	-83	-112	-29
Cost per ton	\$29,700	\$151,900	\$195,300	\$321,800

Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Woodstove New Source Performance Standards

NERA’s detailed cost-effectiveness analysis puts into clear perspective the excessiveness of proposed rule’s costs, particularly when compared to the marginal emission reductions achievable at those costs. Especially in a small consumer-driven industry such as this, these cost-effectiveness estimates are far beyond what can possibly be considered reasonable. Rather, they are exorbitant and therefore by themselves preclude a determination in favor of EPA’s proposed Step 2 and 3 standards as BSE under CAA Section 111.

Notably, neither EPA’s nor NERA’s cost analyses account for the two key data quality issues identified above: (1) the imprecision of the laboratory test methods used for certification and (2) the lack of correlation between emissions measured in test labs and those generated by homeowners in the field (including emissions variation based on homeowner use of cordwood). As discussed above, these issues deprive EPA’s proposed Step 2 and 3 standards of real meaning in terms of an ability to predict the level of emission reduction that will actually be achieved through an appliance’s certification to the standard (if, indeed, any reduction will be achieved at all). Emission limits set at such low levels become an arbitrary “numbers game,” unreflective of the actual emission reductions that will be achieved in the real world. In short, because of these problems, EPA’s proposed Step 2 and Step 3 standards are likely to be *even less cost-effective* than NERA’s analysis has shown.

The implications of the NERA analyses for the current proposal are obvious: that the proposal does not adequately consider costs, as required under CAA Section 111. As NERA’s analysis shows, even if, *arguendo*, the emission reductions implicated by a 2.5 g/hr or 1.3 g/hr limit were not confounded by the demonstrated precision problems and could be shown to be

representative of homeowner use, those reductions would come at an unreasonably high cost, particularly in light of the still significant (and significantly less costly) reductions achievable with a 4.5 g/hr limit. It is therefore no surprise that NERA has shown that each incremental reduction from the 4.5 g/hr level becomes even less cost-effective, unreasonable, and ultimately untenable from the standpoint of cost effectiveness.

3. EPA Has Failed to Adequately Address the Change-Out Implications of Its Proposal

The inappropriateness of EPA's proposed Step 2 and 3 standards is reinforced by the ample data on the largest contributor to woodstove PM emissions: uncertified woodstoves, and the implications of these proposed standards for the pace with which homeowners will replace them. In short, EPA data and confirmatory analysis demonstrate that imposition of more stringent emissions limits would amount to nothing other than a meaningless numbers game that may not yield significant emissions reductions from new woodstoves but will increase prices, which will reduce incentives for consumers to exchange outdated, poorly-performing uncertified woodstoves for current, more efficient certified models.

The level of continued ownership and use of *uncertified* woodstoves is evaluated in another study by Dr. Houck commissioned by HPBA.²¹⁹ This study comprehensively reviewed current woodstove ownership and use data and hearth industry manufacturing records dating back to 1989, as well as survey-based estimates of woodstove change-outs since 1987.²²⁰ It also estimated national PM emissions in 2010 for each category of woodstove (freestanding uncertified conventional cordwood stoves, freestanding non-catalytic certified cordwood stoves, freestanding catalytic certified cordwood stoves, and freestanding pellet stoves).²²¹ The study demonstrates that, as of 2010, over 6 million uncertified woodstoves remained in homes throughout the country.²²² Furthermore, an estimated 35.4% of all freestanding woodstoves owned were certified or pellet stoves (493,311 certified catalytic stoves, 1,562,153 certified non-catalytic stoves, and 841,429 pellet stoves).²²³ While this percentage reflects significant growth in ownership of certified woodstoves since 1987, higher-emitting uncertified conventional woodstove models still account for a far greater percentage (64.6%).²²⁴ This is despite the fact that nearly all new woodstoves sold in the past 25 years have been certified, as all woodstoves manufactured for the U.S. market since July 1, 1990 have required NSPS certification.²²⁵ In all, the 64.6% of the total woodstove ownership represented by uncertified woodstoves accounted

²¹⁹ See generally James E. Houck, Ph.D., THE FRACTION OF FREESTANDING WOOD-FUELED STOVES IN CURRENT USE THAT ARE U.S. EPA CERTIFIED CORDWOOD STOVES AND WOOD PELLET STOVES (2011) [EPA-HQ-OAR-2009-0734-0264] ("Houck 1").

²²⁰ *Id.* at i.

²²¹ *Id.* at ii.

²²² See *id.* at 32.

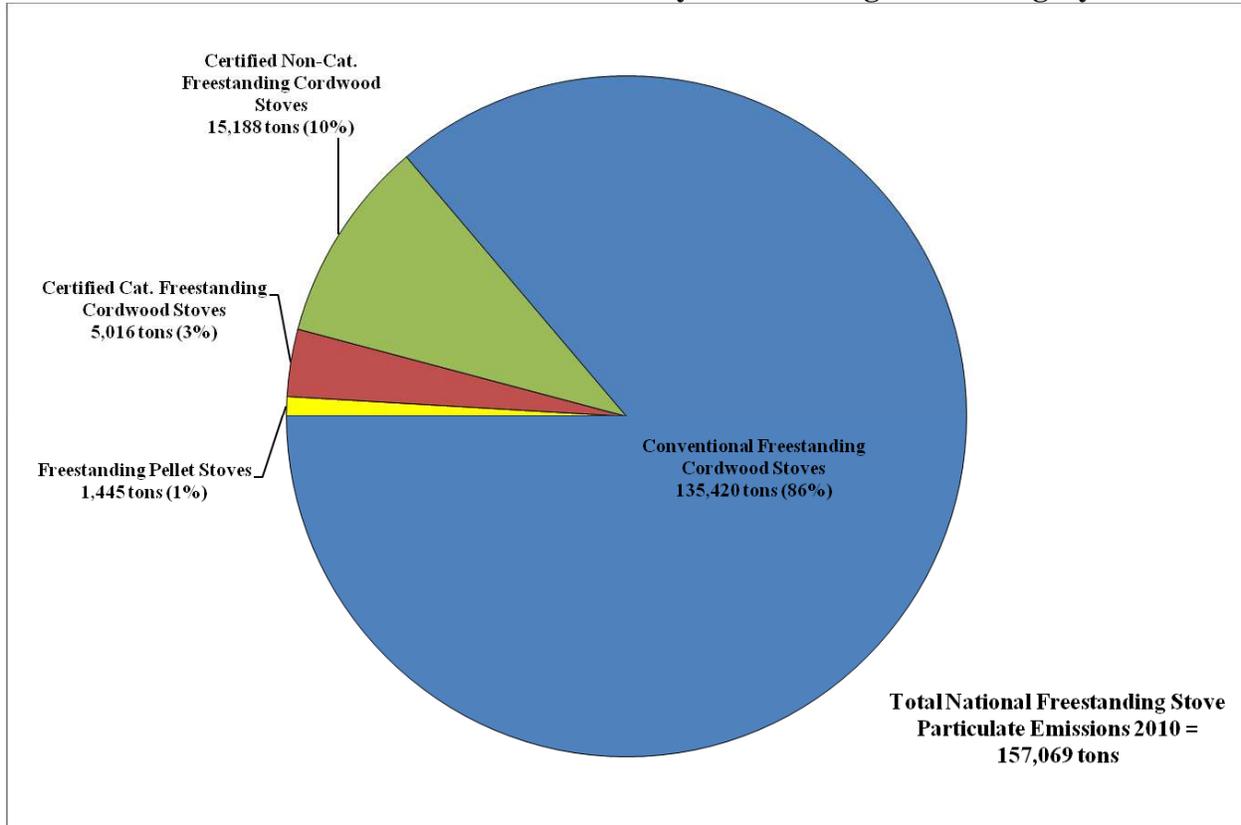
²²³ *Id.* at ii, 31.

²²⁴ See *id.* at 32.

²²⁵ See *id.* at 1.

for **86%** of the total 2010 PM emissions from each category of woodstoves owned in 2010.²²⁶ As illustrated in the graphic below, these unregulated woodstoves are undoubtedly the largest contributor of national emissions, and the largest emission reductions necessarily must result from targeting them.

2010 National Particulate Emissions By Freestanding Stove Category



The previously discussed Houck 2 study further elucidates the impact of uncertified woodstove use. In addition to evaluating emissions according to certification ranking, Dr. Houck compared emissions between in-home uncertified appliances and certified ones, analyzing emissions data from 209 emissions tests on 62 uncertified stoves.²²⁷ The study “confirm[ed] that certified stoves do have substantially lower particulate emissions under real-world, in-home usage as compared to uncertified models.”²²⁸ Even after accounting for differences in efficiency between certified and uncertified woodstoves (*i.e.*, differences attributable to the fact that certified appliances burn less fuel to satisfy the same heating demands), the data indicates that

²²⁶ *Id.* at 32-33. The share of emissions represented by uncertified conventional woodstoves accounted for 135,420 tons/year PM emissions. *Id.* at 33. In comparison, certified catalytic woodstoves, certified non-catalytic woodstoves, and pellet stoves accounted for 5,016, 15,188, and 15,188 tons/year PM emissions respectively. *Id.*

²²⁷ Houck 2, *supra* n.202, at ii.

²²⁸ *Id.* at iii, 3.

uncertified woodstoves are still responsible for far greater a share of total emissions. In fact, after adjusting for efficiency, the data showed that certified woodstoves emit on average 53% less than uncontrolled, uncertified appliances.²²⁹ In sum, the data points strongly to homeowner use of uncertified woodstoves as a critical factor in PM woodstove emissions inventories.²³⁰

The likely real-world effect of widespread change-out of uncertified woodstoves is perhaps best illustrated through experience with systematic change-out programs on a smaller scale. One example is the Libby, Montana change-out program, which took place over four winters beginning in 2005.²³¹ The change-out program, documented in a study and subsequent report, involved the replacement of about 1200 older, high-emitting woodstoves (approximately 95% of area woodstoves) in Libby, Montana, a residential community with significant residential woodstove use and emissions.²³² Over the course of change-outs over four years, ambient winter PM concentrations “gradually declined” to a point where, during the final winter studied, PM concentrations were significantly below baseline year levels.²³³ This reduction, in fact, was significant enough to put Libby in compliance with the National Ambient Air Quality Standard for PM_{2.5}.²³⁴ The emissions impact of the Libby change-out program was further recognized by the Health Effects Institute’s independent Review Committee, which concluded that “the study had demonstrated that ambient PM_{2.5} concentrations in the community were reduced during the course of the change-out program, and that this reduction was sustained over subsequent winters.”²³⁵

²²⁹ See Houck 1, *supra* n.219, at vi (mean emissions rates for all certified and uncertified stoves in data set were 10.4 g/hr and 22.2 g/hr respectively).

²³⁰ The data and analysis appearing in Houck 1 and Houck 2 are further supported by EPA’s own AP-42 data. See U.S. EPA, Report on Revisions to 5th Edition AP-42: Section 1.10, Residential Wood Stoves, available at <http://www.epa.gov/ttn/chief/ap42/ch01/bgdocs/b01s10.pdf>. Consistent with Dr. Houck’s findings, EPA similarly determined that PM emission factors for uncertified woodstoves (15.3 g/kg) are significantly higher than those for certified non-catalytic (7.3 g/kg) or catalytic woodstoves (8.1 g/kg). *Id.* Of course, the congruency between EPA’s and Dr. Houck’s conclusions should not be surprising, given both analyses’ reliance on the same underlying data (much of which was developed previously by Dr. Houck).

²³¹ See generally Curtis W. Noonan, *et al.*, *Assessing the Impact of a Wood Stove Replacement Program on Air Quality and Children’s Health*, Health Effects Institute, Rep. No. 162 (Dec. 2011), available at <http://pubs.healtheffects.org/getfile.php?u=677>.

²³² *Id.* at 1-2.

²³³ *Id.* at 1.

²³⁴ *Id.*

²³⁵ *Id.* at 2.

It is particularly significant (and not surprising) that the improvements in Libby's air quality due to the change-out program have had a continuing *long-term* impact, as discussed in a recent article by Dr. Houck.²³⁶ Dr. Houck's observations include the following:

- The frequency of episodic high 24-hour events above the 35 $\mu\text{g}/\text{m}^3$ NAAQS standard has dramatically dropped from the original baseline level of 6 events to zero in the most recent heating season for which data is available (2011-2012), and only one such event occurred in each of the three prior heating seasons (2008-2009 through 2010-2011).
- The average heating season concentration of $\text{PM}_{2.5}$ dropped by approximately 30% over the period since the change-out's completion.
- Community members have anecdotally observed continued improvement in air quality, visibility, and respiratory health since the completion of the program.²³⁷

Such improvements demonstrate the effectiveness of wide-scale change-out in achieving emissions reductions, and the resultant significance of policies that encourage rather than disincentivize scrappage.

The economic implications of policies affecting consumer change-out are explored in NERA's economic analysis, attached to these comments and summarized in part above. NERA's modeling plainly demonstrates that any tightening of the current NSPS limit is certain to carry demand impacts, with fewer consumers willing to change-out ("scrap") their old, uncertified appliances for new, lower emitting, but less affordable ones. In the case of the Step 1 4.5 g/hr NSPS limit, new woodstove sales would be reduced by 2,500 (a 3.4% reduction). However, this reduction in sales would be accompanied by an increase in the number of uncertified, high-emitting woodstoves which would otherwise have been "scrapped" but would instead remain in use. Specifically, approximately 1,007 preexisting woodstoves otherwise exchanged would remain in use, representing about 31 tons of annual emissions.

²³⁶ See James E. Houck, *The Libby, Montana, Wood Stove Change-out: Did the Change-Out Work?*, HEARTH & HOME (May 2013).

²³⁷ *Id.* at 63-70. For instance, Kathi Hooper, Director of the Lincoln County Environmental Health Department in Libby observed, "The air here is visibly cleaner now. We get comments frequently from people, like me, who grew up here; they mention how noticeable the difference is, how much farther you can see and how much cleaner everything smells." Dr. Jay Maloney of the St. John's Lutheran Hospital in Libby further observed, "Especially during periods of inversions, now compared to 20 years ago there have been drastic differences as far as the number of people that come in with exacerbation of COPD . . . , pneumonia and asthma." This is echoed by Dr. Brad Black, CEO & Medical Director for the Center for Asbestos Related Disease, who noted, "I can't say enough. I think [the change-out] was a great project and it did very good things for this community and improved the quality of life, particularly for people with lung disease because they still have trouble on days with inversions, but it would be much worse if the air were like it was before the change-out." *Id.* at 67, 69.

A 2.5 or 1.3 g/hr NSPS limit would similarly carry demand and scrappage impacts, though of a significantly grander scale. If EPA were to adopt either of these limits, new certified woodstove sales are likely to be reduced by 15,600 (21.4%) or 23,300 (31.9%) respectively. Further, an additional 5,246 or 8,304 uncertified, higher-emitting woodstoves would remain in use under a 2.5 and 1.3 g/hr Step 2 limit respectively. These uncontrolled woodstoves equate to **163 to 258 tons** of emissions each year. Thus, while aggregate emissions still would be reduced, the total reduction is considerably offset by the adverse scrappage effect. In fact, as the uncertified woodstoves still in homeowner use continue to age, their emissions may only get worse.²³⁸ Thus, under an overly stringent emission limit, incremental emissions reductions are significantly neutralized due to the significantly diminished incentives for the elimination of existing uncertified woodstoves responsible for the vast majority of total emissions.

The above analyses together unmistakably show that emissions can be significantly (and economically) reduced through change-outs. That so many consumers have resisted change-outs over the last 25 years reflects the average consumer's disincentive to scrap long-lasting, still functional uncertified appliances and buy new certified ones. For economically disadvantaged homeowners who harvest their own wood, the fact that their current, uncontrolled stove still heats their home is an argument that is hard to overcome, particularly during hard economic times. Given the modest market for certified woodstove appliances,²³⁹ it is patently illogical to impose a limit that significantly increases the costs of new certified woodstoves, resulting in even fewer certified woodstove purchases and, therefore, slower change-out of the over 6 million high-emitting uncertified woodstoves still in use. And the illogic of this approach is even more apparent when, as is the case here, those more stringent emissions limits give only the *appearance* of emissions reductions, but nothing more.

So far, EPA has failed to take into account this so-called "scrappage effect," of its proposed Step 2 and 3 emission limits as it is required to do under Section 111. By limiting the aggregate emission reductions achievable, the reduced scrappage under the proposed Step 2 and 3

²³⁸ One additional but separate risk related to the change-out issue is the potential effect of tightened standards on the proliferation of home-built stoves. In other words, increased prices associated with tightened standards may further drive potential stove-buyers to instead develop their own home-made alternatives. Such stoves raise an assortment of issues, including emissions impacts and safety implications over which EPA would have absolutely no control.

²³⁹ Dr. Houck was able to calculate annual market size for certified woodstoves based on HPBA's compilation of annual manufacturer shipment records. The market for certified cordwood woodstoves peaked in 1991 with 158,185 units shipped and then again in 2008 with 141,108 units shipped. Houck 1, *supra* n.219, at 28. (EPA's Regulatory Impact Analysis recorded a somewhat higher estimate of 166,527 woodstove shipments in 2008 but also noted a 24% average annual decline in woodstove sales since 2005. RIA, *supra* n.217, at 3-23 to 3-24. As illustrated in Houck 1, oftentimes – indeed 12 years out of a 24-year period – shipments of new certified woodstoves fall below 100,000 units per year. Houck 1, *supra* n.219, at 28. Based on Houck 1 and HPBA's historical shipment data, NERA was able to project future certified stove sales and projected a modest estimate of 101,000 certified stove sales in 2018 *if there were no changes to the NSPS*.

standards affects both the cost-effectiveness of the rule and scale of its environmental impacts. As discussed in Part III.B *supra*, **both** the proposed standards' economic and environmental costs, including the standards' "counter-productive environmental effects" in slowing change-outs, must be considered in determining whether EPA's proposed standards have been "adequately demonstrated" under the statute and associated precedent.²⁴⁰ EPA must consider the rule's scrappage impacts in concert with its other environmental and economic costs.

The proposed standards' scrappage effects are not only relevant to the "adequate demonstration" question. Indeed, they strike at the heart of BSER itself. As also discussed in Part III., *supra*, the best "system" of emission reduction connotes more than just technology. Here, the best "system" of emission reduction is a coupling of sorts, one in which technology is aligned with adequate price-demand incentives for homeowner change-outs, producing a performance standard that reflects both features of this "system." EPA's proposed Step 2 and 3 limits do not do so.

Together, the demonstrated imprecision of the test methods, the lack of correlation between certification scores and field performance, the demonstrated cost-*ineffectiveness* of the proposed Step 2/3 standards (including the adverse impacts these standards will have on change-outs/scrappage) all show that the proposed Step 2/3 standards exceed the bounds of reasonableness, do not reflect BSER, and have not been "adequately demonstrated." For these reasons, the proposed Step 2 and 3 standards fatally conflict with Section 111 and must therefore be abandoned.

4. EPA Proposes to Use Legally Unsupported and Technically Unsound Test Methods²⁴¹

Part and parcel of EPA's proposed performance standards are the test methods on the basis of which compliance will be measured. As noted above in our comments to EPA's proposed Step 1 standard, HPBA supports EPA's proposed use of consensus based standards such as ASTM E2515 and CSA B415.1-100. HPBA cannot, however, agree with EPA's proposed deviations from ASTM E2780. Among other significant concerns, the deviations would neutralize two changes to EPA Method 28 that were specifically designed to address longstanding and well-recognized problems in the Method 28 provisions prescribing how to determine the low burn rate for certification testing. As shown elsewhere in these comments, Part V(C)(b) *supra*, incorporating these provisions would not be unlawful or otherwise impractical, so as to trigger

²⁴⁰ *Essex Chem. Corp.*, 486 F.2d at 438-439; *see also id.* at 433 (NSPS limits must not be "exorbitantly costly in an economic or environmental way").

²⁴¹ To be clear, HPBA's test method concerns with regard to Steps 2 and 3 are the same concerns which render EPA's proposed Step 1 standard flawed, and EPA's decision not to use ASTM E2780 in full is equally unsupported at all steps. The test method issues are just one additional reason why HPBA opposes adoption of Step 2 or 3 limits, in addition to the many reasons set forth above. Alternatively, if EPA proceeds with finalizing those limits, it must revise the proposed test method provisions that correspond to both (or all three) of its proposed steps.

any exception to the NTTAA.²⁴² Moreover, even in the absence of NTTAA constraints, these changes are not supportable on the merits, for the reasons developed in the Lab Coalition’s comments, which HPBA hereby supports and incorporates by reference.

C. EPA SHOULD REVISIT CERTAIN OTHER ELEMENTS OF THE PROPOSED SUBPART AAA.

1. EPA Lacks a Sufficient Basis to Establish Its Proposed Step 2/3 Cordwood Standard

All stakeholders – industry, states, and EPA – have agreed on the need to move toward more real-world representative test methods for certifying woodstoves that are based on burning cordwood and not dimensional lumber cribs. A broadly based ASTM work group is engaged in an expedited effort to develop a more representative cordwood test method for woodstoves as these comments are being written, and this effort hopefully will be completed and accepted as an ASTM method before the revised regulations are finalized. HPBA supports a transition from crib-based standards to cordwood-based standards because the latter are more representative of real world usage.²⁴³ Such a transition, however, cannot be achieved as abruptly as EPA proposes—namely, allowing manufacturers just five years to transition from a crib-based standard of 4.5 g/hr to an *undemonstrated* cordwood-based standard of 1.3 g/hr. The proposed rule prematurely would adopt cordwood-based certification requirements, while skirting the obvious data limitations precluding lawful use at this time of cordwood testing to determine compliance. The requirement to test *only* with cordwood to demonstrate compliance with Step 2/3 standards is nothing more than a blind step forward into the unknown, uninformed in any way by meaningful, data-driven analysis.

a. A Mandatory Cordwood-Based Standard Is Incompatible with CAA Section 111

EPA’s proposal to mandate cordwood-based compliance with the proposed Step 2/3 1.3 g/hr emission limit is completely unsupportable as a matter of law. EPA has put the cart ahead of the horse by setting standards for cordwood performance before data have even begun to be generated with the new method. Imposing cordwood-based test methods and emission limits for its proposed Steps 2 and 3 before the relevant data from the appropriate test methods have been developed *per force* renders such standards *un-demonstrated* under CAA Section 111.

Even if EPA had some reasonable basis for imposing a 1.3 g/hr limit based on use of crib-based testing (which, as shown above, there is not), EPA has adduced no evidence whatsoever

²⁴² See NTTAA §12(d)(3); Rev. Cir. A-119, § 1.

²⁴³ The objective is to develop a test method that is more representative of consumer use patterns, starting with the fuel (cordwood). All test methods, however, inevitably involve compromises driven by costs and other technical and practical considerations. In the end, it is hoped that broad central tendencies of consumer behavior will be captured, but it is unrealistic to expect that all aspects of consumer behavior can be reflected.

that this standard (or the alternate step two standard of 2.5 g/hr) can be met using cordwood.²⁴⁴ To the contrary, EPA plainly states that its Step 2 1.3 g/hr limit was based on data from models “using crib wood as the test fuel as specified in [the existing] Method 28.”²⁴⁵ In other words, the proposal contemplates issuing a standard entirely based on data from one fuel and requiring compliance through use of an entirely different fuel (and test method, for that matter).²⁴⁶

This runs counter to the D.C. Circuit’s strong admonition over 40 years ago against limits that reflect “a significant difference between techniques used by the agency in arriving at standards and requirements presently prescribed for determining compliance with standards.”²⁴⁷ As discussed in Part III.A.1 above, EPA must ensure that its standards are derived from data based on the same reference methods by which compliance will be measured, or offer a very strong justification for departing from this principle. On the current record, EPA cannot possibly claim that its proposed Step 2 standard has been “adequately demonstrated.” Thus, EPA’s proposal to require certification based on use of cordwood rather than cribwood at Step 2 is fundamentally incompatible with CAA Section 111, and must be abandoned.

b. EPA Should Consider Alternative Means to Encourage Increased Cordwood Testing

That EPA may not pursue mandatory cordwood testing and certification requirements at this time does not mean that the Agency is without regulatory means to incentivize increased cordwood testing and data collection. Rather than finalize the Step 2/3 limit as proposed, EPA should, pursuant to CAA Section 111(j), adopt an alternative cordwood-based limit of 7.5 g/hr that would serve as a temporary bridge between crib-based standards and cordwood-based standards. Upon generation of a sufficient set of data based on cordwood testing, EPA can reevaluate whether a different cordwood-based standard constitutes BSER in a future rulemaking.

Certification testing with dimensional lumber Douglas fir cribs was included in Method 28 when EPA originally promulgated Subpart AAA. At that time, the existing data base upon which to make BDT determinations was generated under the earlier Oregon program using such cribs because that approach was believed to improve the precision (reproducibility) of the test method. The Curkeet Ferguson study, however, *supra* n.10, has demonstrated conclusively that

²⁴⁴ To the limited extent that any cordwood-based data is presently available, that data is largely irrelevant due to the anticipated massive changes to the ASTM cordwood-based method that is now in development, as further discussed below.

²⁴⁵ 79 Fed. Reg. at 6,355.

²⁴⁶ EPA’s failure to account for something as basic as the type of fuel to be used in certification carries very real implications where, as here, it is well-recognized that woodstove emissions may vary significantly on the basis of fuel choice, among other factors. By and large, field and laboratory testing of certified stove models employing consumer burn practices – including cordwood use – has yielded emission levels well above the same models’ EPA certification scores. See Houck 2, *supra* n.202, at 4.

²⁴⁷ *Portland Cement Ass’n*, 486 F.2d at 396.

the precision of Method 28 is quite poor (plus/minus 3 g/hr, or worse). Moreover, crib-based certification scores are not representative of homeowner emission performance, when using “real” fuels (*i.e.*, cordwood), which has motivated state and local governments to call for more representative test methods based on burning cordwood.

Despite these developments, EPA has little choice but to continue to rely on certification values that require testing with Method 28 cribs. At this time, EPA cannot establish defensible standards based on cordwood testing because: (i) available data for making BSER determinations are almost exclusively Method 28 data; and (ii) existing cordwood test methods have not been used, and even if they had been, the methods were not designed to reproduce expected homeowner use patterns.²⁴⁸ Nonetheless, HPBA believes that these obstacles should not stand in the way of including, in the proposed revision to Subpart AAA, an alternative path to obtain certification using data generated from the new cordwood test method. This alternative path could be based on CAA Section 111(j), which allows for innovative technology waivers. To be sure, this will require some creativity on EPA’s part to adapt Section 111(j) for use in the context of Subpart AAA. That degree of creativity, however, would be no larger than that which was needed in establishing Subpart AAA’s model line certification framework over twenty years ago. The establishment of the model line certification framework involved the adaptation of the basic stationary source architecture of Section 111 to focus regulatory requirements upstream of homeowners/consumers, *i.e.*, on manufacturers and distributors. In essence, this involved importing approaches from CAA Title II (mobile sources) and putting them to use in Subpart AAA. HPBA believes that there is sufficient flexibility within the text of Section 111(j) to facilitate a similar accommodation in this rulemaking. And it is clear that the environment would benefit from the establishment of an alternative certification program that would move us closer to the ultimate goal of having a Subpart AAA certification program based entirely on cordwood testing.

Below, we discuss in detail the elements of the Section 111(j) program that HPBA proposes. In short, that program would: (i) foster innovation within the industry—namely, designing/redesigning woodstoves to minimize emissions that result from burning cordwood; (ii) achieve equivalent or greater “real world” PM emission reductions than that which would otherwise be achieved under crib-based standards; and (iii) acknowledge the need to move toward cordwood-based testing, by serving as an appropriate “bridge” between crib- and cordwood-based testing programs given that insufficient data exists at present to move any further in the direction of a cordwood-based certification program.

²⁴⁸ To address this problem, an ASTM task group was established in 2013 that includes representatives from all stakeholders to develop a new cordwood method that reflects homeowner use patterns. The task group has made substantial progress, but it will take additional time to complete that process. While the task group is likely to achieve its goal prior to EPA’s issuance of a final rule, it would take substantial additional time to generate a database using the new ASTM method that is suitable for standard-setting.

1. CAA Section 111(j) Framework

The Clean Air Act includes express authority for the Administrator to grant a waiver from the otherwise applicable NSPS, to “encourage the use of an innovative technological system or systems of continuous emission reduction,”²⁴⁹ that are not “adequately demonstrated,” and that have a “substantial likelihood” (considering any previous failures to operate effectively or to meet NSPS) of achieving “greater continuous emission reduction than that required to be achieved under the standards of performance which would otherwise apply, or achieve at least an equivalent reduction, at lower cost in terms of energy, economic, or nonair quality environmental impact[.]”²⁵⁰

The owner/operator of the source (analogous to the woodstove manufacturer in the Subpart AAA context) is allowed an extended period of time—up to seven years after the waiver is granted, or four years after source commences operation, whichever is earlier²⁵¹—to bring the new technology into compliance with the applicable NSPS, with extensions for up to an additional 3 years available in certain circumstances.²⁵²

EPA may grant such waivers with the consent of the relevant State Governor, where the owner/operator of the proposed system demonstrates “that the proposed system will not cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation, function, or malfunction,” considering effects on other pollutants and methods for reducing risk to public health, among other factors listed in the statute.²⁵³

The statute does not limit the number of waivers that EPA may issue under 111(j); rather, EPA has broad discretion to determine the number of waivers that may be granted overall, so long as that number does “not exceed such number as the Administrator finds necessary” to ascertain whether the proposed system will operate effectively, and satisfy the relevant statutory conditions.

2. EPA Should Set an Alternative Emissions Target of 7.5 g/hr and Grant Alternative Certificates of Compliance for Model Lines that Can Demonstrate Compliance with that Target Through Testing Pursuant to the New ASTM Cordwood Test Method

EPA is proposing to retain the longstanding model line certification framework in Subpart AAA. Under that framework, regulated entities are not the homeowners/facilities that install and operate the “new source,” but are instead the manufacturers that offer models for sale. Subpart AAA establishes a model line certification scheme similar to the CAA Title II scheme, under

²⁴⁹ 42 U.S.C. § 7411(j)(1)(A).

²⁵⁰ *Id.* § 7411(j)(1)(A)(i) & (ii).

²⁵¹ *Id.* § 7411(j)(1)(E).

²⁵² *Id.* § 7411(j)(2).

²⁵³ *Id.* § 7411(j)(1)(A)(iii) & final paragraph.

which manufacturers are allowed to test only a representative example of a new model line, and obtain a certificate of compliance (certification) that allows them to sell any quantity of substantially similar units. Under Subpart AAA, EPA grants certificates of compliance based on the results of Method 28 testing using cribs.

Operating within this non-traditional NSPS framework, EPA should apply CAA Section 111(j) so as to grant alternative certificates of compliance to woodstove manufacturers that have designed and tested new model lines pursuant to the new ASTM cordwood test method, in anticipation of cordwood usage in the field. EPA should limit the grant of such alternative certificates of compliance to those manufacturers that can demonstrate compliance with an alternative cordwood emissions target of **7.5 g/hr** *in lieu* of the proposed crib testing-based standards. Because cordwood test results should be much more predictive of field performance than crib test results, HPBA expects that model lines that meet this alternative emissions target will achieve substantial reductions in field emissions beyond what is achieved, on average, by currently certified woodstoves.

As explained above, the average emissions rate of woodstoves that are currently certified under Subpart AAA is 10.4 g/hr, which reflects approximately a 50% reduction from the average emissions rate (22.2 g/hr) of uncontrolled woodstoves.²⁵⁴ Thus, an alternative cordwood emissions target of 7.5 g/hr would improve upon the status quo considerably. Importantly, HPBA expects that the universe of woodstoves certified to meet this alternative cordwood limit will achieve an average emissions rate significantly lower than the 7.5 g/hr emissions target. A comparison of existing cribwood-based Subpart AAA non-catalytic standards and the mean and median weighted average emissions rates (when burning crib wood, *not* cordwood) for woodstoves currently certified to meet those standards reflects that woodstove manufacturers are often able to achieve emissions rates well below established standards. In other words, the way to evaluate the anticipated emissions reductions that would result from establishing an alternative cordwood emissions target of 7.5 g/hr is by comparing the predicted average emissions rate that would be achieved by the universe of woodstoves that qualified for the alternative target (*as opposed to* the alternative emissions target itself) with the average real-world emissions rate of woodstoves that are currently certified under Subpart AAA.

3. EPA Has Authority to Issue Alternative Certificates of Compliance Under Section 111(j)

EPA should establish an alternative emissions target of 7.5 g/hr for cordwood, upon which the grant of alternative certificates of compliance would be based. In so doing, EPA can satisfy each of the statutory requirements for granting Section 111(j) waivers. *First*, the requirement to obtain the consent of the Governor of the State in which the source is to be located (§ 111(j)(1)(A)) could be satisfied with a programmatic “opt in” provision, which would give states the option to authorize the program in their state or choose not to do so. If a state chooses not to opt in to this program, manufacturers would only be able to offer products for sale in that state that have been certified with crib-based testing.

²⁵⁴ See Houck 2, *supra*, n.202.

Second, woodstoves that have been tested and shown to meet the alternative cordwood emissions targets using the ASTM cordwood test method undoubtedly constitute innovative technology that has not yet been adequately demonstrated.²⁵⁵ There is currently very little data available that measures emissions performance using cordwood fuel, and no data with the new method, which is still under development. As noted earlier, one of the design criteria for this new method is to replicate common consumer use patterns.

Third, woodstoves that are designed to meet cordwood-specific standards can operate effectively, and there is a substantial likelihood that such models will achieve greater emission reductions (or at least equivalent reductions) in the field compared to the proposed standards because they will have been tested with real world fuels pursuant to a method that reflects consumer use patterns.²⁵⁶ As explained above, HPBA expects that this alternative approach would result in continuous emissions reductions that significantly exceed those predicted to result from the “baseline” crib testing-based approach.

Fourth, because models certified with cordwood pursuant to this alternative certification scheme can be expected to achieve, on average, better real world emissions performance than models that are certified to meet crib-based standards, there can be little doubt that EPA’s grant of alternative certificates of compliance for model lines certified to meet the alternative cordwood emissions target will not: (i) cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation, function, or malfunction;²⁵⁷ or (ii) prevent attainment and maintenance of any NAAQS.²⁵⁸ It is obvious that consumers are going to burn cordwood, not crib fuel, regardless of whether EPA establishes cordwood-specific standards.

Fifth, as discussed above, there is no specified limit to the number of waivers that EPA may grant under Section 111(j).²⁵⁹ The statute directs only that EPA shall not grant more waivers than are necessary to ascertain whether woodstoves designed to meet cordwood-based standards will achieve the conditions in Sections 111(j)(1)(A)(ii) and (iii). Any suggestion that a new technology would somehow cease to be innovative upon the grant of one (or even several) Section 111(j) waivers by EPA is misguided. Manufacturers tailoring woodstove design to meet alternative cordwood standards will have an ongoing incentive to achieve greater emission reductions through continued innovation and research and development efforts.

Finally, EPA can grant alternative certificates of compliance in a manner consistent with the timing restrictions in Section 111(j)(1)(E).²⁶⁰ EPA has proposed to retain the five year duration

²⁵⁵ See 42 U.S.C. § 7411(j)(1)(A)(i).

²⁵⁶ See 42 U.S.C. § 7411(j)(1)(A)(ii).

²⁵⁷ See *id.* § 7411(j)(1)(A)(iii).

²⁵⁸ See *id.* § 7411(j)(1)(B).

²⁵⁹ See *id.* § 7411(j)(1)(C).

²⁶⁰ See *id.* §§ 7411(j)(1)(D), (E) (EPA shall not permit a waiver to extend beyond seven years after the grant of a waiver or four years after the date on which a source commences operation, whichever is sooner).

for certificates of compliance under Subpart AAA. However, model line certification often occurs prior to the commencement of production, and the certification applies to the duration of time for which legal permission is granted by EPA for manufacturers to offer to sell and sell appliances. Although the four-year limit in Section 111(j) is tiered to the commencement of operation, that limit can be reconciled with the five-year certification duration under Subpart AAA, under which products within a certified model line must first move through channels of commerce (*e.g.*, warehouses, show rooms, trade shows) prior to installation and the commencement of operation.

2. EPA Needs to Strengthen the Proposed Transition Provisions

- a. HPBA Supports EPA’s Proposal To Grandfather Currently Certified Appliances for the Full Duration of Their Certifications, But Emphasizes the Need to Clarify Regulatory Requirements Applicable To Such Models.

Unlike most other appliance categories, EPA has included in its proposal regarding woodstoves certain crucial provisions necessary to facilitate successful and cost-effective transition to the proposed rule’s Step 1 standard. Under EPA’s proposal, woodstove models that are certified under the Phase II emission limits that went into effect in 1990 prior to the new rule’s effective date may continue to be manufactured and sold until the earlier of the expiration date of their existing certification (5 years after certification) or any revocation of the certification.²⁶¹

EPA has solicited comments on the proposed certification-based transition period, and whether there would be “any critical economic impacts” were EPA not to allow the “full 5-year certification period.”²⁶² HPBA strongly urges EPA to retain a transition period reflective of the complete certification term in the final rule.

For starters, EPA’s reference to the proposed transition period as a “five-year certification period” is a misnomer. Very few manufacturers would actually have anywhere close to five years between the rule’s effective date and the expiration date of a certification for each model line. Thus, many certificates under the current rule will have expired well prior to the end of the Step 1 program.

This already modest transition period will be essential to manufacturers taking on the rule’s assorted demands. The rule’s proposed Step 1 limits will become effective as of the effective date of the rule. As acknowledged repeatedly by EPA in the proposed rule’s preamble, there are unavoidable “lead time” issues that must be taken into account where, as here, new NSPS requirements are applied to an industry that manufactures consumer products. Companies will necessarily need time to redesign or modify existing product designs, test them in accordance

²⁶¹ 79 Fed. Reg. at 6,338-39. This provision would also apply to pellet stoves under the proposal. HPBA agrees with EPA that such a transition provision is appropriate for both categories of appliances.

²⁶² *Id.* at 6,339.

with promulgated test methods, and get them certified consistent with final standards. Without an adequate transition period – one that gives credit to manufacturers’ compliance with and certification under preexisting requirements—manufacturers would be forced entirely off the market for months or longer while rushing to secure certification. Anything less than the full certification period simply fails to account for the substantial time and investments necessary for all manufacturers – mostly small businesses, as recognized by EPA²⁶³ – to undertake necessary new product development and complete the rule’s rigorous new testing and certification requirements. Accordingly, any “grandfathering” period less than the full certification period would fail to satisfy Section 111’s BSER requirement.²⁶⁴

Furthermore, as stated in the proposed rule, adequate time is needed to avoid “logjams” at certifying laboratories facing a sudden inrush of certification requests not just for woodstoves, but for the many other appliance categories that are included in the revised rule. Lastly, the demonstrated imprecision of the test methods (and the lack of correlation between certification scores and real-world emissions) are relevant here as well. In short, the implication of these issues is that, on average, there are unlikely to be meaningful differences in emissions performance between “grandfathered” models (even those with certification scores >4.5 g/hr) and models certified to Step 1 requirements. Ultimately, given the significant capabilities of existing manufacturers to timely achieve emissions consistent with the contemplated 4.5 g/hr limit, allowing a shorter transition period would simply elevate costs without creating any significant additional air quality benefits. As such, it is essential that EPA retain the proposed approach of effectively grandfathering current certifications for the remainder of their legal lives.²⁶⁵

²⁶³ *See id.*

²⁶⁴ *See* 52 Fed. Reg. at 5,000 (“To be BDT, a technology must be available at a reasonable cost. For wood heaters, an important element of the cost of a technology is the cost of delaying production while models with that technology are designed and certified. Thus, BDT applies, and the standards apply, only to those classes of new sources that can meet the standards with a reasonable lead time . . .”).

²⁶⁵ In addition to the proposed certification-based transition period, EPA has solicited comments on potentially “grandfathering” woodstove models tested in good faith the proposed Step 1 standards and test methods currently contemplated, even though the rule’s final provisions may ultimately differ. Since there are significant legal issues and technical issues with EPA’s proposed test methods, *see* Part V *supra*, it is more than unfair to put manufacturers in the position of having to test with the proposed methods while the significant concerns we have adduced concerning the proposals are addressed in this rulemaking proceeding. Beyond this fundamental problem with EPA’s proposal, it is very doubtful that EPA’s proposal would even be workable, given manufacturers’ likely confusion as to what the proposed rule even requires. While the current preamble to the proposed rule contains various pronouncements about changes to the existing test methods and procedures, the proposed rule’s substantive provisions themselves in many cases fail to elucidate precisely the methods that would ultimately be required (and in other cases, statements are made in the proposed rule that are nowhere reflected in the preamble).

In doing so, HPBA stresses that EPA must be clear as to how manufacturers obtain transitional status, and what is required of them. HPBA believes it unnecessary to impose additional, duplicative requirements on manufacturers who have already obtained certifications under the current Subpart AAA procedures. Such manufacturers should not be required to obtain any additional duplicate certification or take any other specific measures inconsistent with preexisting requirements imposed under the current Subpart AAA. For example, there are significant problems with applying the proposed revised quality assurance/control provisions to currently certified units. As explained in Part IV.C to these comments, to the extent the new quality assurance/control provisions apply to currently certified units, they must be changed because they are based on a flawed assumption that independent third party certification entities can approve and oversee quality assurance/control plans for models for which certifications were granted based on testing by other laboratories. For such grandfathered models, the “threat” that the certifying entity will withdraw its listing based on quality assurance/control issues is absent because the testing that supported certification was performed by laboratories that do not offer the services necessary to meet the proposed quality assurance/control requirements. In addition, sixty days is not nearly enough time for manufacturers of grandfathered models to develop and submit new quality assurance/control plans, nor is thirty days sufficient for independent third party certifying entities to approve them or for EPA to review and approve them. One solution which we have proposed for other appliance categories is to use the quality assurance/control programs already in place pursuant to the safety listings for grandfathered appliances to fill this gap.²⁶⁶

b. EPA Must Provide An Adequate Sell-Through Period.

In its proposed changes to § 60.532(b), EPA proposes a six-month sell-through period for retailers and distributors for previously certified woodstoves and pellet stoves manufactured prior to the effective date of the final rule. EPA rightly recognizes that a sell-through period is necessary to allow the channels of trade to clear for units in model lines that were previously certified, but for which a certificate has expired. EPA has not, however, provided nearly enough time to allow for inventories to clear. Nor has EPA accounted for the sell-through needs of manufacturers, distributors, and retailers of currently certified appliances grandfathered into the

²⁶⁶ These issues are discussed in more detail in Part IV.C, our comments on Administrative, Compliance, and Transition Provisions. In addition, labeling and owner’s manual requirements under the current Subpart AAA should continue to apply to woodstoves with current certifications after issuance of the revised NSPS. Manufacturers who have reasonably relied on labeling provisions already in place would otherwise be denied the benefit of that reliance, and could incur unwarranted costs and delays to make changes to the labeling for an existing, certified product line. Moreover, to the extent any new labeling requirements apply to grandfathered models subject to 1990 standards, EPA should make clear that any such requirements will only apply to newly manufactured units. Those units already in the channels of distribution or at retail cannot reasonably be subject to new labeling requirements without resulting in substantial costs.

proposed new regulatory scheme.²⁶⁷ EPA provides no justification for why a six month period would be sufficient.²⁶⁸ Merely asserting that this period of time is reasonable²⁶⁹ does not make it so, particularly given that the existing Subpart AAA regulations provide for a longer sell-through period of two years.²⁷⁰

The inadequacy of EPA's proposed six-month sell through period is demonstrated in the attached report by Mr. Charles Page, evaluating the results of a recent retailer survey commissioned by HPBA.²⁷¹ The survey included established retailers of residential wood heaters, including a total of 26 retailers throughout each of the major selling regions of the country.²⁷²

As this report demonstrates, the best and most appropriate solution for previously certified appliances is an indefinite sell-through period, with no hard deadline on the ability of retailers or distributors to sell existing inventory. This approach properly recognizes, among other things: (1) the substantial uncertainty in determining inventory levels and the unpredictability of the woodstove market (and the effect of a limited sell-through period in increasing this uncertainty); (2) the significant financial impacts that retailers and distributors would suffer if given insufficient time to sell off unsold inventory; (3) the absence of any risk that retailers would stockpile previously certified appliances prior to the rule's effective date; and (4) the reality that uncertainty at the retailer/distributor level about their ability to sell previously certified models translates to reluctance to purchase them while they are certified, which in turn can result in significant economic injury to manufacturers. The Page Report shows that the potential economic implications of inadequate sell through relief are substantial.

For example, in 2013, retailers were left with approximately 17% of stranded inventory, which equates to approximately 24,000 wood and pellet stoves. If around 65% of that unsold inventory was made up of wood burning units with an average estimated retail value of \$2120, the unsold inventory of wood burning appliances in 2013 was worth over \$30 million at retail. If 35% of that unsold inventory was made up on unsold pellet stoves, which sell at a higher average retail price of \$2500, retailers were left with \$21 million of unsold inventory, for a combined

²⁶⁷ Proposed § 60.532(a) provides for no sell-through period for models grandfathered into the regulations under EPA's proposed transition provisions, and instead provides that model lines can no longer be manufactured *or sold* after expiration or revocation of the current certification.

²⁶⁸ See 79 Fed. Reg. at 6,365.

²⁶⁹ See *id.*

²⁷⁰ See *Int'l Fabricare Inst. v. EPA*, 972 F.2d 384, 392 (D.C. Cir. 1992) ("A conclusory statement, of course, does not in itself provide the 'satisfactory explanation' required in rulemaking.").

²⁷¹ See Page Report (Attachment 7), *supra* n.91. As discussed at n.91, Mr. Page has 37 years of industry experience in product development, sales, and marketing for various hearth industry manufacturers.

²⁷² *Id.*

estimated value of unsold distributor/retailer inventory in 2013 of \$50 million for both wood and pellet burning appliances. *See* Page Report, *supra* n. 10 at 16. Accordingly, if retailers are not given an adequate sell-through period to reduce that unsold inventory, they will suffer millions of dollars in losses. That loss will echo throughout the supply chain, devastating the industry.

It follows that the benefits of an unlimited sell-through period far exceed any minimal incremental emissions impacts from the sale of previously certified or grandfathered woodstoves, and that woodstove retailers will need more than one season in which to sell off existing inventory. (Indeed, six months that are comprised primarily of the off-season is like having no sell-through period at all.).²⁷³

In the end, the Page Report shows that there is no “one size fits all” deadline for a sell-through provision, and that any deadline will implicate some level of stranded inventory and accompanying economic costs. In the case of woodstoves, all of these units will be from previously certified model lines, so the “tail” of the distribution (*i.e.*, the units left after whatever deadline might be established) demonstrably will have de minimis environmental implications if they are allowed to be sold. HPBA firmly believes that this is the approach that EPA should adopt for the woodstove sell through provision in the revised regulation.

VII. COMMENTS ON PROPOSED HYDRONIC HEATER STANDARDS

BACKGROUND

Outdoor hydronic heaters provide heat (and sometimes hot water) to a nearby building by heating water or water-antifreeze, which is continuously pumped from the unit to the building and circulated throughout the heating system.²⁷⁴ Most hydronic heaters are used to heat homes, barns, and other buildings in rural, cold-climate areas where wood is readily available.²⁷⁵ In addition to burning cordwood, some hydronic heater models burn other biomass as fuel, such as corn or wood pellets.²⁷⁶ Outdoor hydronic heaters (as the name implies) are typically located outside the building or buildings that they serve in a small shed.²⁷⁷ Indoor hydronic heaters are most commonly installed in the basement of the home, but some are located in the living area.²⁷⁸

²⁷³ And if EPA fails to provide such an extended sell-through period, both retailers and manufacturers would suffer costs that render compliance with the proposed rule’s standards even more difficult and costly than it already will be. These costs are additional, unreasonable economic costs that must be considered under Section 111, and they are easily avoided through extension of the proposed sell-through period.

²⁷⁴ U.S. EPA, <http://www.epa.gov/burnwise/woodboilers.html> (EPA Home – Air & Radiation – Burn Wise – Consumers – Choosing Appliances – Choosing the Right Hydronic Heater).

²⁷⁵ *Id.*

²⁷⁶ *Id.*

²⁷⁷ *Id.*

²⁷⁸ *Id.*

The units can operate cyclically²⁷⁹ or by using either full or partial thermal storage.²⁸⁰ While also referred to as “boilers,” the correct terminology is “hydronic heater,” to differentiate them from boilers, which are pressurized systems subject to a very different scheme of regulatory requirements.

The current RWC NSPS, specifically exempts hydronic heaters,²⁸¹ and, until recently, they were not subject to state or local emission standards either. However, this all began to change in the mid-1990s, when interest in regulating them began to grow, particularly in the Northeast. In 1995, EPA conducted tests of outdoor wood-burning hydronic heater emissions, which showed that particulate emissions from a properly operated outdoor hydronic heater were similar to indoor wood stoves and other wood heating appliances.²⁸² EPA issued a report in 1998 stating, “[c]ompared to a wide range of residential heating options, these furnaces’ emissions were of the same order as other stick wood burning appliances.”²⁸³ Years later, a number of states issued reports to the contrary that: (i) discussed how emissions from hydronic heaters are significantly higher than other residential wood burning devices; and (ii) provided recommendations for regulatory action.²⁸⁴ This resulted in the creation of a number of state regulatory programs, and the EPA voluntary program for these appliances.

The EPA voluntary program was created through a stakeholder process that involved hydronic heater manufacturers, the Northeast States for Coordinated Air Use Management (NESCAUM), and a number of state regulatory agencies. That stakeholder effort culminated in stakeholder consensus on several foundational documents, which address such subjects as

²⁷⁹ Cyclical hydronic heating systems operate by providing heat based on the building’s demand for it. The unit connects to the building’s thermostat, and a damper slows or stops combustion in the firebox based on the temperature of the home and the water in the unit.

²⁸⁰ In remote-thermal-storage hydronic heaters, the units contain a smaller amount of water on board the system but pump water to larger, remote thermal storage tanks, which can range from 100-500 gallons or more. In batch-burn, full-thermal-storage hydronic heaters, the unit burns wood from start to end without shutting down, and the thermal storage is on-board.

²⁸¹ 40 C.F.R. §§ 60.530(h)(2), 60.531 (2012).

²⁸² Joseph C. Valenti & Russell K. Clayton, *Emissions from Outdoor Wood-Burning Residential Hot Water Furnaces* (U.S. EPA, Project Summary, February 1998), available at http://www.outdoorfurnacefacts.com/cms/repository/media/EPA_600_SR_98_017%20Summary.pdf.

²⁸³ *Id.*

²⁸⁴ See NESCAUM, ASSESSMENT OF OUTDOOR WOOD-FIRED BOILERS (March 2006), available at http://www.nescaum.org/documents/assessment-of-outdoor-wood-fired-boilers/2006-1031-owb-report_revised-june2006-appendix.pdf/; NY State Env'tl. Prot. Bureau, SMOKE GETS IN YOUR LUNGS: OUTDOOR WOOD BOILERS IN NEW YORK STATE (Mar. 2008) [EPA-HQ-OAR-2009-0734-0079].

emission limits, the format of the standards, labeling requirements, and test methods.²⁸⁵ The Voluntary Program was launched in January 2007, and all HPBA Hydronic Heater Caucus manufacturers signed Partnership Agreements and became charter members.²⁸⁶ This program has been extremely successful in achieving emission reductions in a short period of time. Phase 1 of the EPA Outdoor Wood-fired Hydronic Heater Program required manufacturers to achieve an emission standard of 0.60 lbs/MMBtu heat input.²⁸⁷ In order to be qualified under the voluntary program, models must be tested by an accredited third-party laboratory to verify that they meet the emission standards.²⁸⁸ Models qualified to the Phase 1 standards (marked with orange hangtags) were approximately 70 percent cleaner than typical uncontrolled units.²⁸⁹ Ultimately, 9 manufacturers qualified a total of 12 qualified “year round” models and a total of 11 qualified “heating season only” models, for an overall total of 23 qualified Phase I models.²⁹⁰

Phase 2 of the Voluntary Program began in October 2008.²⁹¹ The Phase 2 Program emission limit is 0.32 lbs/MMBtu heat *output* (in contrast to the Phase 1 standard of 0.60 lbs/MMBtu of heat *input*), and no individual test run can exceed an emission rate of 18.0 grams per hour.²⁹² Output-based format requires the models to have both low emissions and high efficiency in order to satisfy the standard. Phase 2 qualified models (marked with white hangtags) are approximately 90 percent cleaner than baseline, uncontrolled models.²⁹³ Phase 2 also expanded the scope of the voluntary program by including models that burn solid biomass material other than wood (*e.g.*, corn, pellets, etc.).²⁹⁴ It also includes hydronic heaters designed for indoor use

²⁸⁵ See, *e.g.*, NESCAUM MODEL REGULATION FOR OUTDOOR HYDRONIC HEATERS (Jan. 29, 2007) [EPA-HQ-OAR-2009-0734-0185]; U.S. EPA, EPA, INDUSTRY LAUNCH AGREEMENT FOR CLEANER OUTDOOR WOOD HEATERS (Jan. 29, 2007), *available at* <http://yosemite.epa.gov/opa/admpress.nsf/4b729a23b12fa90c8525701c005e6d70/007f277470e64745852572720057353c!OpenDocument>.

²⁸⁶ EPA HYDRONIC HEATER PROGRAM PHASE 2 PARTNERSHIP AGREEMENT [EPA-HQ-OAR-2009-0734-0100].

²⁸⁷ *Id.*

²⁸⁸ *Id.*

²⁸⁹ See 79 Fed. Reg. at 6,336.

²⁹⁰ U.S. EPA, <http://www.epa.gov/burnwise/owhharchive.html> (EPA Home – Air & Radiation – Burn Wise – Partners – Program Participation – Archived List of Cleaner Hydronic Heaters). The emissions for the “heating season only” qualified models are calculated as if the models are only used during the heating season. *Id.*

²⁹¹ EPA HYDRONIC HEATER PROGRAM PHASE 2 PARTNERSHIP AGREEMENT [EPA-HQ-OAR-2009-0734-0100].

²⁹² *Id.*

²⁹³ See 79 Fed. Reg. at 6,336.

²⁹⁴ EPA Hydronic Heater Program Phase 2 Partnership Agreement (Docket ID: EPA-HQ-OAR-2009-0734-0100).

and hydronic heaters equipped with heat storage capacity.²⁹⁵ Since the beginning of the Phase 2 Program, 20 manufacturers have qualified a total of 39 models.²⁹⁶

On January 29, 2007, NESCAUM, with technical and financial support from the EPA and several states (and input from hydronic heater manufacturers), released a model rule to assist state and local agencies in developing regulations for outdoor hydronic heaters.²⁹⁷ It was not a coincidence that the model rule was announced virtually contemporaneously with the EPA Voluntary Program, and that the two share many common elements; the two efforts were closely coordinated, and involved the use of a stakeholder process similar to the one that was utilized for the Voluntary Program. The purpose of the model rule is to promote cleaner units through common standards that will protect air quality and public health while minimizing the compliance burden on manufacturers.²⁹⁸ In furtherance of these goals, the model rule includes many of the same critical elements that are contained in the EPA voluntary program, including critical definitions, emission standards, test method procedures, a certification process, and labeling requirements.²⁹⁹ Thus, like the Phase 2 Program standards, the NESCAUM model rule includes a 0.32 lbs/MMBtu heat output emission limit with an 18 grams per hour cap.³⁰⁰

Several states have adopted the hydronic heater emission standards from the NESCAUM model rule and the EPA voluntary program as state laws, and other states are in the process of developing similar regulations.³⁰¹ Indiana, Maine, Maryland, New Hampshire, New York, Oregon, Pennsylvania, Rhode Island, and Vermont have laws consistent with the voluntary program's Phase 2 standard of 0.32 lbs/MMBtu of heat output.³⁰² Washington State also strictly regulates hydronic heaters. Manufacturers seeking to sell wood-fired hydronic heaters in Washington must submit test results to the State's Department of Ecology showing the device

²⁹⁵ *Id.* Due to the program's expansion, the program name is broader in Phase 2 (EPA Hydronic Heater Program) than it was in Phase 1 (EPA Outdoor Wood-fired Hydronic Heater Program). *Id.*

²⁹⁶ U.S. EPA, <http://www.epa.gov/burnwise/owhlist.html> (EPA Home – Air & Radiation – Burn Wise – Partners – Program Participation – List of Qualified Hydronic Heaters). Of the 39 qualified models, 31 are stick-wood, batch-load models; 7 are wood-pellet, continuous-feed models; and 1 is a wood chip, continuous-feed model. *Id.*

²⁹⁷ See NESCAUM MODEL REGULATION FOR OUTDOOR HYDRONIC HEATERS (Jan. 29, 2007) [EPA-HQ-OAR-2009-0734-0185].

²⁹⁸ *Id.*

²⁹⁹ *Id.* The model rule also allows state and local governments to tailor provisions of the template to address their specific concerns. *Id.*

³⁰⁰ *Id.*

³⁰¹ U.S. EPA, Frequently Asked Questions, EPA's Phase 2 Voluntary Partnership Program: Hydronic Heaters, <http://www.epa.gov/burnwise/pdfs/FAQs10-22-08VT.pdf>.

³⁰² NESCAUM, <http://www.nescaum.org/topics/outdoor-hydronic-heaters> (Home – Topics – Outdoor Hydronic Heaters – State and Federal Regulations).

emits no more than 4.5 grams of fine particles per hour.³⁰³ Additionally, many states and local governments apply nuisance, opacity, or other regulations to hydronic heaters. In Wisconsin, for example, outdoor wood boilers are regulated by local smoke and zoning ordinances.³⁰⁴

In sum, the EPA's voluntary program and state laws based on it and the NESCAUM model rule have resulted in significant improvements in the industry. Indeed, current qualified models are 90 percent cleaner than pre-program models, and numerous manufacturers have participated in this initiative. The short history of this program stands as a remarkable example of what can be accomplished when regulatory agencies and the private sector agree to work together toward achieving ambitious common goals. However, as discussed in the sections below, the proposed rule fails to give appropriate weight to these remarkable recent accomplishments in regulations and technology and, as a result, would, if implemented, impose unreasonable burdens on manufacturers and consumers.³⁰⁵

EPA'S PROPOSAL

In the proposed rule, EPA has grouped all subcategories of hydronic heaters (cycling; full thermal storage; and partial thermal storage) together. Furthermore, EPA has proposed to establish only one set of standards, rather than distinguish between fuel types (*e.g.*, cordwood versus wood pellets). The proposed rule sets forth two "steps" of standards for hydronic heaters, to be phased in over time. The proposed Step 1 standard contains an emission limit (0.32

³⁰³ Wash. State Dep't of Ecology, http://www.ecy.wa.gov/programs/air/outdoor_woodsmoke/Wood_boilers.htm (Air Quality – Wood-fired Hydronic Heaters).

³⁰⁴ Wis. Dep't of Health Servs., <http://www.dhs.wisconsin.gov/eh/air/fs/waterstoves.htm> (Local Ordinances Regulating Outdoor Wood Boilers and Residential Wood Smoke in Wisconsin).

³⁰⁵ EPA cites two studies from 2005 and 2006 as demonstrating "that PM_{2.5} concentrations in proximity to a typical outdoor hydronic heater . . . can exceed the 24-hour NAAQS." 79 Fed. Reg. at 6,336. Both of these studies predate the EPA voluntary program. More recent studies show that, when installed with stack heights consistent with manufacturers' instructions, Phase 1 and Phase 2 voluntary program models have ambient impacts well below the revised 24-hour PM_{2.5} NAAQS at the closest receptor to the unit (10 meters or roughly 30 feet) that can be modeled. *See, e.g.*, RTP Environmental Assocs., Inc., "Review of NYSDEC Modeling Study for NESCAUM Model Rule and NAAQS Compliance Evaluation for EPA Voluntary Phase 1 Compliance Outdoor Hydronic Heater" (Aug. 21, 2007) (Attachment 12 to these comments); Tech Environmental, Air Quality Dispersion Modeling of the E-Classic 2300 Outdoor Wood Hydronic Heater (July 2012) (Attachment 13 to these comments). In particular, Tech Environmental's modeling of a Phase 2 qualified unit demonstrated that maximum predicted 24-hour PM_{2.5} concentrations are in the range of 0.5 to 2.9 µg/m³. Given that the ambient impacts of qualified appliances fall well below the 24-hour NAAQS standard, there is no need for "real time" ambient monitoring, *e.g.*, using the method developed by NESCAUM and NYSERDA. HPBA commissioned an assessment of that monitoring method, which concluded that the method lacks a sound scientific basis. *See* Memorandum from Dr. Rick Reiss, Exponent, to Allan Cagnoli, Hearth, Patio & Barbecue Association, Review of NESCAUM wood smoke monitoring proposal (Dec. 3, 2009) (Attachment 14 to these comments).

lb/MMBtu heat output) that is equivalent to the emission limit in Phase 2 of EPA’s Voluntary Outdoor Wood-fired Hydronic Heater Program, but EPA also proposes to impose a “cap” of 7.5 g/hr for individual test runs, which is lower than the existing cap (18.0 g/hr) under the Phase 2 Voluntary Program. The proposed Step 2 standard is 0.06 lb/MMBtu heat output.

EPA has requested comment on an alternative approach that establishes a Step 2 standard of 0.15 lb/MMBtu and a Step 3 standard of 0.06 lb/MMBtu. Under this alternative, the Step 2 standard would take effect three years after the effective date of the final rule, and the Step 3 standards would take effect 8 years after the effective date of the final rule.

The proposed rule specifies a number of test methods that are to be used to determine compliance with the standards and requirements for certification for hydronic heaters. Generally, manufacturers must use Method 28 WHH to measure heat output (MMBtu/hr) and they must use Method 28 WHH in conjunction with ASTM E2515-10 to measure particulate matter emission rate (lb/MMBtu heat output). The proposed rule specifies additional test methods for units equipped with external heat storage, but it does not differentiate between partial thermal storage and full thermal storage units. During Step 1, manufacturers of units equipped with external heat storage are to: (i) test with cribs as specified in Method 28 WHH and are to measure input and heat output according to ASTM E2618-13 (“Standard Test Method for Determining Particulate Matter Emissions and Heating of Outdoor Solid Fuel-fired Hydronic Heating Appliances”); and (ii) test with cord wood as specified in “A Test Method for Certification of Cord Wood-Fired Hydronic Heating Appliances With Partial Thermal Storage: Measurement of Particulate Matter (PM) and Carbon Monoxide (CO) Emissions and Heating Efficiency of Wood-Fired Hydronic Heating Appliances with Partial Thermal Storage” (the “Proposed PTS Method”).³⁰⁶ Manufacturers have the option of submitting either the crib or cord wood test results to EPA for certification compliance.

During Step 2, the proposed rule requires testing and certification with cord wood only. It appears that the proposed rule generally requires testing with Method 28 WHH (even though this method specifies testing with oak cribs) and ASTM E2515-10, with one exception: models equipped with *external partial heat storage* units must be tested using the Proposed PTS Method.³⁰⁷ Oddly, the proposed rule does not prescribe a cordwood-specific test method for cycling units or units equipped with full thermal storage, even though consensus test methods do exist for each of those subcategories of hydronic heaters—ASTM E2618-13 for cycling units; and ASTM E2618-13 Annex A1 for full thermal storage units.

³⁰⁶ As EPA’s preamble acknowledges, the Proposed PTS Method was developed by Brookhaven National Laboratory. See 79 Fed. Reg. at 6,343 n.18. Part V.C.2.c.2 of HPBA’s comments recounts the questionable history of this test method.

³⁰⁷ HPBA presumes that the test methods applicable to Step 2 under the proposed approach would also apply to Step 3 of the alternative approach. EPA, however, has not clarified which test methods would apply to Step 2 under the alternative approach.

A. EPA’S PROPOSED 0.32 LB/MMBTU STEP 1 EMISSION LIMIT IS APPROPRIATE, BUT EPA SHOULD NOT IMPOSE A 7.5 G/HR CAP FOR INDIVIDUAL TEST RUNS, AND IT SHOULD NOT MANDATE TESTING WITH TWO FUEL TYPES

HPBA believes that the proposed 0.32 lb/MMBtu Step 1 emission limit is a sensible, achievable limit that constitutes BSER. This limit has been adequately demonstrated as achievable by manufacturers, taking into account its cost effectiveness and other relevant factors for CAA Section 111 standards setting. Under that proposed Step 1 emission limit, hydronic heaters would be approximately 90% cleaner than they were prior to the launch of EPA’s voluntary program.

Although HBPA supports the 0.32 lb/MMBtu limit, HPBA does not support EPA’s proposal to cap particulate matter emissions for individual test runs at 7.5 g/hr.³⁰⁸ EPA has failed to explain why the existing 18.0 g/hr cap under the Phase 2 Voluntary Program is not sufficiently protective. In fact, EPA offers no justification whatsoever in the preamble to the proposed rule for lowering the cap to 7.5 g/hr. For that reason alone, the proposed cap is arbitrary and should not be finalized.³⁰⁹ It comes as no surprise that EPA has not provided a reasonable basis for the proposed 7.5 g/hr cap as part of the Step I standard. Beyond not offering any justification for the proposed Step 1 cap, EPA has never offered any justification for including any cap in the format of the standard. Both are needed to support EPA’s position. EPA needs to recall that the 18 g/hr cap in EPA’s Voluntary Program was taken—without explanation or justification—from the woodstove NSPS, which includes an 18 g/hr cap per individual test run.³¹⁰ The same g/hr cap is also in NESCAUM’s Model Rule³¹¹—again, without explanation or justification—and, not surprisingly, it appears in the hydronic heater regulations of 9 states that are based on the Model Rule. The logic behind the lb/MMBtu component is clear: define BSER in terms of the amount

³⁰⁸ Although the preamble describes the 7.5 g/hr figure as a “cap . . . for individual test runs,” *see* 79 Fed. Reg. at 6,344, the text of the proposed rule does not clearly convey that this is indeed a cap on individual test runs in clear. *Compare* proposed § 60.5475(b)(1) (referencing particulate matter emission limit of 7.5 g/hr) *with* existing 40 C.F.R. § 60.532(b)(2) (stating that particulate emissions shall not exceed 18 g/hr “during any test run”). Given the language in the preamble and the fact that the Phase 2 Voluntary Program currently includes an 18.0 g/hr “cap” on individual test runs, we interpret proposed § 60.5475(b)(1) to impose a cap on individual test runs. If EPA is intent on finalizing a cap on individual test runs, it should make this clear in the text of the rule.

³⁰⁹ *See, e.g., Public Citizen v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993) (“The requirement that agency action not be arbitrary or capricious includes a requirement that the agency adequately explain its result.”).

³¹⁰ *See* 40 C.F.R. § 60.532(b)(2).

³¹¹ *See, e.g., NESCAUM Model Regulation for Outdoor Hydronic Heaters* (Jan. 29, 2007) (Docket ID: EPA-HQ-OAR-2009-0734-0185), at § 4.A.2 (“No person shall distribute or sell, lease, import, or install an outdoor hydronic heater after March 31, 2010 unless it has been certified to meet a particulate matter emission limit of 0.32 lb/MMBtu heat output. In addition, within each of the burn rate categories, no individual test run shall exceed 18 grams per hour.”).

of delivered, useful energy per pound of particulate emitted, and it is clear that this component is and should be the main, if not the only, driver. The proposed cap, on the other hand, is an arbitrary tack-on that could lead to pernicious results. It makes no sense to deem a model in noncompliance based solely on a randomly established cap where the weighted average emissions meet the 0.32 lb/MMBtu limit. Yet that is precisely what will happen.³¹² EPA's imposition of the proposed cap is all the more arbitrary because it apparently selected the cap without any consideration of test method precision.

HPBA also strongly opposes EPA's proposal to mandate testing with both crib wood and cord wood. EPA has not provided any justification for imposing this burdensome requirement. Cord wood testing data are irrelevant to demonstrations of compliance for appliances that are certified with crib wood. The converse is also true. By requiring manufacturers to nevertheless test with the type of fuel that they are not certifying appliances with, EPA's proposal will at least double the costs of compliance. *See* HPBA Paperwork Reduction Act Comments, Section IV. Furthermore, this requirement will put additional strain on laboratories' limited capacity to deal with requests to test and certify products following promulgation of the final rule. In short, there are more measured and reasonable ways of generating data on cordwood performance than what EPA is proposing, and EPA should use them.

HPBA understands the desire to transition from testing and certifying with crib wood toward doing so with cord wood; however, EPA's proposal to require testing with both fuel types during Step 1 to develop data on cordwood performance needed for standard-setting, and then simultaneously, in this same rulemaking proceeding, establish cord wood-based standards for Step 2 *before* these data are developed and available puts the cart before the horse. As is the case with EPA's similar proposal for woodstoves, this amounts to a blind step into the dark, which is beyond unreasonable, and cannot be supported legally. Rather than finalize the requirement that manufacturers test with both crib wood and cord wood during Step 1, EPA should instead clarify that manufacturers need only test and certify with *either* crib wood or cord wood, not both.³¹³

³¹² For example, one HPBA member (Hardy Manufacturing) currently has a Phase 2 qualified unit with weighted average emissions of 0.30 lb/MMBtu, but a high individual test run (during the Category 4 burn rate, which is by far the least heavily weighted) of 7.95 g/hr, *i.e.*, barely above the proposed cap. *See* Dirigo Laboratories, Inc., MODEL KB125 EPA QUALIFICATION TESTING PROJECT # 024-HH-1-REVISION 2 PREPARED FOR HARDY MANUFACTURING (undated) (Attachment 15 to these comments). That unit would not meet the Step 1 standard even though it achieves the 0.32 lb/MMBtu limit and has weighted average particulate matter emissions of 4.09 g/hr.

³¹³ EPA has also solicited comment on potential additional regulatory requirements for hydronic heaters, "such as limits on visible emissions and limits on use in non-heating seasons[.]" 79 Fed. Reg. at 6,343. Section 111 precludes EPA from adopting operational or work practice standards such as a limit on use during the non-heating season, where, as here, performance standards for hearth appliances are feasible (and indeed have been proposed). *See* 42 U.S.C. § 7411(h)(4) ("Any standard promulgated . . . shall be promulgated in terms of standard of performance (Continued...)

For these reasons, HPBA supports the proposed 0.32 lb/MMBtu emission limit, but we are unable to endorse wholesale EPA's proposed Step I standards.³¹⁴

B. EPA'S PROPOSED STEP 2/3 STANDARDS ARE NOT BSER

As discussed in the Legal Background section of these comments, for emission standards to be "adequately demonstrated" within the meaning of CAA Section 111, they must meet several requirements. EPA must use data derived from the same test methods that will be used to determine compliance with the standards. EPA must account for test method imprecision when setting standards. EPA must also account for the full range of fuels and thus, it must use data derived from burning fuels shown to be the "dirtiest." EPA's proposed Step 2/3 (0.06 lb/MMBtu) standard does not meet these requirements. EPA lacks sufficient data derived using the required test methods to support an adequate demonstration finding. EPA has no cordwood data derived from testing with any of the proposed Step 2/3 test methods. Moreover, upon elimination of data derived from testing with flawed, outdated methods (namely, Method 28 OWHH), as well as data derived from testing with a fundamentally different method (EN 303-05), EPA is left with only three data points within the range of interest here. None of those data points meets the Step 2/3 standard (0.06 lb/MMBtu), and one of those data points barely meets the alternative step 2 standard (0.15 lb/MMBtu). It would be arbitrary for EPA to establish the Step 2/3 standard based on such a limited dataset, particularly because: (i) EPA has not evaluated precision for any of the hydronic heater test methods; and (ii) EPA does not know whether test results for cycling models burning crib wood are even likely to be representative of real world emissions.

In addition to not being adequately demonstrated, EPA's proposed Step 2/3 standard is not cost effective. EPA has not adequately considered "the possible economic impact of the promulgated standards" for hydronic heaters.³¹⁵ Because the proposed Step 2/3 standard will be

whenever it becomes feasible to promulgate and enforce such standard in such terms."). Moreover, it is entirely inappropriate for EPA to promulgate visible emission limits for hydronic heaters or any other appliance covered under this rulemaking. EPA has not established and cannot establish what would qualify as BSER for visibility, particularly given the confounding influence of water vapor (steam)—a major component of hydronic heater emissions—on visibility measurements. Even if EPA found some way separate out such confounding variables and account for other uncertainties, determination of BSER for visibility would require substantial additional work—including technical feasibility and cost-effectiveness demonstrations—such that, at the very least, re-proposal of the rule would be necessary.

³¹⁴ Elsewhere in these comments, HPBA discusses the need for a transition/grandfathering scheme to avoid taking hydronic heaters off the market as manufacturers scramble to obtain certification. *See* Part VII.C below. HPBA also explains why EPA must revise its proposed test methods and compliance procedures for hydronic heaters (§ 60.5476). *See* Part V.C.2.c of HPBA comments.

³¹⁵ *Portland Cement Ass'n*, 486 F.2d at 387.

“exorbitantly costly in an economic or environmental way,” that standard does not satisfy the Section 111 requirements.³¹⁶

1. EPA Lacks Reliable Data for Standards Setting

EPA has inappropriately used a “kitchen sink” for its “adequately demonstrated” finding by basing its proposed Step 2/3 standard on data from a variety of sources that reflect testing using different methods. EPA claims that, based on its review of all hydronic heater emission data available, the proposed Step 2/3 limit of 0.06 lb/MMBtu “is already met by 4 hydronic heater models (2 cord wood and 2 pellet models) built by 2 U.S. manufacturers (using crib wood as specified in Method 28 WHH in the voluntary partnership program), as well as over 50 European models per test method EN 303-05 (which uses cord wood).”³¹⁷ The data that purportedly justify EPA’s proposed Step 2/3 standard is unusable for several reasons and thus, it is arbitrary for EPA to find that the Step 2/3 standard is adequately demonstrated.

First, EPA does not point to *any* data derived from testing with cord wood using either the ASTM method (E2618-13) or the Proposed PTS Method that manufacturers must use under proposed § 60.5476(a)(2)-(3). Consequently, EPA’s determination that the proposed Step 2/3 standard is BSER is unfounded guess-work. EPA cannot lawfully establish a standard based on Method 28 WHH and EN 303-05 data, yet require compliance through use of either ASTM E2618-13 or the Proposed PTS Method.³¹⁸ In other words, standards must be derived from data using the same reference methods by which compliance will be measured, absent a strong justification for ignoring this principle. Yet that is precisely what EPA seeks to do in its proposal in plain contravention of the requirements for establishing CAA Section 111 standards.

Second, EPA cannot rely on data from pellet models to establish a single standard for all hydronic heaters. Because EPA has not chosen to issue separate standards for hydronic heaters based on fuel choice (*e.g.*, cord wood versus pellets), it must issue a single standard based on combustion of the “dirtiest” fuel, which many perceive to be cord wood.³¹⁹ Unless EPA can show that the proposed standards are achievable for *all* hydronic heaters—regardless of the fuel that is burned—it cannot meet the “adequate demonstration” requirement in CAA Section 111. In particular, because EPA has not subcategorized hydronic heaters based on fuel choice, it cannot use data from the two pellet models that EPA claims already meet the proposed Step 2/3 standard³²⁰ as a justification to impose that standard on all hydronic heaters.

³¹⁶ *Essex Chem. Corp.*, 486 F.2d at 433.

³¹⁷ *See* 79 Fed. Reg. at 6,359.

³¹⁸ *See Portland Cement Ass’n*, 486 F.2d at 396 (“[A] significant difference between techniques used by the agency in arriving at standards, and requirements presently prescribed for determining compliance with standards, raises serious questions about the validity of the standard.”).

³¹⁹ *See Nat’l Lime Ass’n*, 627 F.2d at 440-41.

³²⁰ *See id.*

Third, EPA cannot defensibly use data derived from EN 303-05 testing to justify the proposed Step 2/3 standard.³²¹ EPA appears to rely on a survey prepared for the New York State Energy Research and Development Authority³²² to support its use of EN 303-05 data, but that survey does not acknowledge the following critical differences between EN 303-05 and North American test methods (*e.g.*, Method 28 WHH, ASTM E2618-13) that preclude reliance on EN 303-05 data to justify the proposed standards in this rulemaking:

- Different emissions measured: EN 303-05 measures dust and organically bound carbon, whereas North American methods measure particulate and condensate vapors. This measured number would be significantly higher than the dust measurement from EN 303-05, but cannot be correlated quantitatively.
- Different sampling location: EN 303-05 allows for emissions sampling either in-stack or using a dilution tunnel, whereas North American methods require use of a dilution tunnel.
- Different appliance operation: EN 303-05 measures emissions with the unit operating only at nominal or rated maximum heat output, whereas North American methods measure four output rates (<30% to 100%).
- Different sampling times: EN 303-05 specifies emissions collection for four 30 minute periods over two fuel burning cycles (2 hours over two fuel burning cycles), whereas North American methods specify emissions collection for the *full* burn duration for each of four test runs.
- Different test cycles: EN 303-05 does not measure “cold starts,”³²³ but instead uses only a hot-to-hot test cycle. North American test methods include cold start testing, which is more representative of real world usage.
- Requirement to use draught regulators: EN 303-05 requires use of draught regulators, which can significantly impact the burn rate profile of the appliances and, in turn, affect performance, whereas draught regulators are rarely used on wood burning equipment in North America.

Two separate comparisons of EN 303-05 and North American test methods—one prepared by Intertek Testing Services³²⁴ and another prepared by the Lab Coalition³²⁵—explain in further detail why these critical differences make it extremely unlikely that any meaningful correlation

³²¹ See 79 Fed. Reg. at 6,359 (noting that “over 50 European models per test method EN 303-05” already meet the proposed Step 2/3 limit).

³²² See NYSERDA REPORT 10-01 [EPA-HQ-OAR-2009-0734-0053].

³²³ “Cold start” refers to starting the test run with no fire in the firebox. By contrast, a “hot start” refers to adding fuel on top of a glowing coal bed.

³²⁴ See Docket ID EPA-HQ-OAR-2009-0734-0281.

³²⁵ See Lab Coalition, *supra* n.97 (comment on EN 303-5 as an alternate or primary test method).

exists between data derived using EN 303-05 and data derived using North American test methods. Perhaps most telling is the following acknowledgement in the most recent iteration of EN 303-05:

The particulate matter emission measured according to this European Standard does not include condensable organic compounds which may form additional particulate matter when the flue gas is mixed with ambient air. *The values are therefore not directly comparable with values measured by dilution tunnel methods. Neither can they be directly translated into ambient air particulate concentrations.*³²⁶

Simply put, EN 303-05 and North American test methods measure different emissions in different ways based on different operational assumptions and thus, any efforts to adjust EN 303-05 to EPA equivalent values is futile. These differences are not just theoretical either:

- One HPBA member (Hardy Manufacturing Company) tested a European model that purportedly meets the proposed Step 2/3 limit, but *used North America test methods* in lieu of EN 303-05.³²⁷ That testing showed that the model in question had dramatically higher emission rates when “cold starts” are accounted for. Although a category 4 test (100% of nominal output) for one model showed an efficiency of 72.8% with 0.08 lb/MMBtu output, two category 1 tests (<15% of nominal output) for that same unit showed efficiencies of 45.8% and 46.4% with 1.37 lb/MMBtu and 1.28 lb/MMBtu (respectively), and a category 2 test (16-24% of nominal output) showed an efficiency of 44.2% with 1.26 lb/MMBtu.³²⁸
- Another HPBA member (Central Boiler) tested its E-Classic 1450 model using both Method 28 WHH and EN 303-05.³²⁹ Using Method 28 WHH, this model does not meet *any* of the proposed standards—it has an average emissions level is 0.18 lb/MMBtu, which exceeds both Steps 2 and 3); it also has a high individual test run of 11.9 g/hr, which exceeds the proposed Step 1 cap of 7.5 g/hr. The EN 303-05 test results stand in stark contrast. The same unit meets the best level achievable in Europe—it has an average emissions level of 7.43 mg/MJ. That converts to 0.017 lb/MMBtu, which is well

³²⁶ EN 303-05-2012, at Table 6 (emphasis added).

³²⁷ Testing was conducted using an ASTM draft protocol (what ultimately became ASTM E2618-13 Annex A2). A summary of that testing is included as Attachment 16 to these comments.

³²⁸ European models with partial thermal storage models such as this one are down drafters, which simply do not perform well when burning crib wood.

³²⁹ The results of that testing are set forth in Attachment 17 to these comments.

below the Step 2/3 limit and less than 10% of the level measured using Method 28 WHH.³³⁰

For these reasons, data from EN 303-05 testing, which constitutes the *vast majority* of data that EPA cites to in support of the proposed Step 2/3 standard, is unusable in this rulemaking.³³¹

Fourth, putting aside the EN 303-05 data that EPA references in the preamble, most of EPA's existing data on hydronic heater particulate matter emissions comes from testing with Method 28 OWHH, a method that has been shown to have unacceptably high uncertainty in measuring delivered heat and overall efficiency. EPA cannot use data from Method 28 OWHH testing to impose the proposed emission limits in Step 2/3.³³² In particular, the heat output measurements from Method 28 OWHH testing—*which are the denominator in the proposed emissions standard (lb/MMBtu output)*—have been discredited because they are based on an unsound methodology.³³³ The Brookhaven National Laboratory, which evaluated Method 28 OWHH for the New York State Energy Research and Development Authority, concluded, among other things, that:

There are significant concerns about the efficiency measurement method and results of the M28 OWHH tests. For many of the [23 White Tag qualified hydronic heater] units tested, the accuracy of the energy output value derived from water temperature and flow rate measurements on the supply side of the heat exchanger is poor, and the reported efficiency levels are considerably higher than those based on stack loss measurements. Where this occurred, the *efficiency results are either very inflated or simply not thermodynamically possible*. For example, for one unit in a Category IV test (steady, full load) the efficiency based on stack loss measurements is 88.11% and the reported efficiency based on the supply side output is 95.2%. For this same test the nominal maximum error on the supply side is only 4.44%. Accounting for the error provides an efficiency range with a lower bound of 90.8%, which is still greater than the stack loss efficiency and thermodynamically impossible. *Given the extensive issues with existing test data and method, output and efficiency ratings based on the*

³³⁰ Alternatively, if the EN 303-05 results are converted using the State of Maine's formula, this results in a value of 0.046 lb/MMBtu, which is still only about 25% of the level that resulted from Method 28 WHH testing.

³³¹ HPBA's comments on EPA's proposed test methods (Part V) explain why EPA cannot establish EN 303-05 as a reference method in this rulemaking.

³³² For example, EPA cannot rely on either of the emissions values within the range of interest for the two Central Boiler, Inc. stick wood models (0.08 and 0.12 lb/MMBtu, respectively) because those values were derived using Method 28 OWHH testing.

³³³ See REVIEW OF EPA METHOD 28: OUTDOOR WOOD HYDRONIC HEATER TEST RESULTS, Brookhaven National Laboratory, Prepared for New York State Energy Research and Development Authority (Sept. 2011) [EPA-HQ-OAR-2009-0734-0218].

original M28 OWHH tests as published cannot be considered accurate or valid.³³⁴

Even EPA seemingly has acknowledged that Method 28 OWHH was deeply flawed. EPA formerly published efficiency data from manufacturers on its Burn Wise website for qualified models under the Phase 2 voluntary program, but it has since effectively invalidated that data by removing it from its website. That acknowledgment was critical for two models in particular—the only two qualified (stick wood) models that EPA claims can meet the proposed Step 2/3 standard³³⁵ had the **highest** efficiency values (95.3% and 101.9%)³³⁶ when tested using what apparently was an outdated, *ad hoc* modification of Method 28 OWHH. Because those models had efficiency values higher than what is theoretically possible, EPA cannot continue to rely on the outdated emissions levels attributed to those two units.³³⁷

Fifth, EPA cannot establish the proposed Step 2/3 standard based on the very limited data that is available from Method 28 WHH testing. Upon elimination of data from pellet fuel models, as well as any data derived from testing with methods other than Method 28 WHH, EPA appears to be left with data from only three models within the range of interest for the proposed rulemaking. **None** of those models can achieve 0.06 lb/MMBtu, and one of those models narrowly achieves the alternative step 2 emission limit of 0.15 lb/MMBtu. Such a modest data set does not support a finding of adequate demonstration, especially once EPA considers that: (i)

³³⁴ *Id.* at 18.

³³⁵ See 79 Fed. Reg. at 6,359.

³³⁶ See US EPA, “Hydronic Heater Method 28 Test Data” (EPA-HQ-OAR-2009-0734-0093).

³³⁷ The manufacturer of those two units (Woodmaster) has since conducted a series of test runs on those units at various burn rate categories, using both hot starts and cold starts, using both crib wood and cord wood. Woodmaster conducted those test runs using an ASTM draft protocol (what ultimately became ASTM E2618-13 Annex A2). The results of those runs are included as Attachment 18 to these comments. There is no full test series and thus, no weighted average result can be determined. Nonetheless, the results of these runs do confirm that the 0.04 lb/MMBtu levels that previously resulted from testing with an *ad hoc* method are misleadingly low, further confirming the inappropriateness of EPA’s reliance on those prior results for its adequate demonstration findings in this rulemaking. Specifically, when the units in question burned crib wood on cold starts, runs were either aborted or resulted in very high emissions (above 2.0 lb/MMBtu). For the 30KW unit, three runs with crib wood on hot starts at burn rate categories 1 and 2 had emissions ranging from 0.05 lb/MMBtu to 0.12 lb/MMBtu; the emissions for the two burn rate category 1 runs were 0.09 and 0.12 lb/MMBtu. Four runs with cord wood on hot starts for that same unit at burn rate categories 1, 2, and 3 had emissions ranging from 0.10 lb/MMBtu to 0.26 lb/MMBtu; the emissions for the only burn rate category 1 test run was 0.21 lb/MMBtu. Finally, three runs with cord wood on cold starts at burn rate category 1 had emissions ranging from 0.10 to 0.11 lb/MMBtu. Separately, Woodmaster conducted six runs with the 60KW unit with crib wood on hot starts, at burn rate categories 2, 3, and 4. Emissions from those runs ranged from 0.13 lb/MMBtu to 0.27 lb/MMBtu. Just one of those six runs was at burn rate category 4, and it resulted in an emissions level of 0.19 lb/MMBtu.

it has no data on test method precision; and (ii) Method 28 WHH data is not representative of real world emissions because the test fuel is oak cribs and not cordwood.

As regards precision, EPA must actually evaluate test method precision; it is not enough to merely address imprecision in the abstract.³³⁸ EPA's failure to analyze and address test method imprecision here is arbitrary. There is very limited precision data for hydronic heater test methods governing cycling units and no available precision data for the hydronic heater test methods governing units with thermal storage. There is no indication that EPA has evaluated precision in this proposal. But the very limited precision data there is for cycling units shows that repeatability (intra-lab) at the 95% confidence level was 0.50 lb/MMBtu.³³⁹ In other words, the difference between two tests for the same unit performed by the same lab is expected to be 0.50 lb/MMBtu or less with a 95% probability. This clearly shows how arbitrary it is to even be considering the limits EPA has proposed for Step 2/3.

As explained above in the comments to EPA's proposed woodstove standards, the Curkeet Ferguson study reveals that precision for woodstove testing is relatively poor given the random nature of burning cordwood.³⁴⁰ Because hydronic heater testing involves measurements of both particulate matter emissions and heat output, it is inherently more complicated than woodstove testing and thus, it is reasonable to expect that the precision of the hydronic heater test method is only going to be worse than that for woodstoves, which is discussed in the Curkeet Ferguson study. Specifically, that study reveals significant levels of imprecision with respect to the woodstove test method: at the 95% confidential level, repeatability was at best 3 g/hr, and reproducibility (ability to reproduce same results using the same method at different labs) ranged from 4.5 to 6.4 g/hr. This poor precision is primarily the result of the random nature of burning wood. Unlike the less complex woodstove testing, hydronic heater testing involves not only PM emissions, but also heat output determinations. Because of the cumulative uncertainty of these additional measurements required for hydronic heater testing, and the random variability of wood burning, it is reasonable to assume that hydronic heater test method precision will be at least as poor as that for woodstove testing. This means that EPA's test methods are not likely to be able to reliably distinguish performance differences within the range of interest for hydronic heaters (between 0.06 lb/MMBtu and 0.32 lb/MMBtu). Given the imprecision, compliance with such low emission limits is more of a lottery than anything else.

EPA cannot justify setting the proposed Step 2/3 standard within the range of likely uncertainty equivalent to or lower than the uncertainty of the underlying test method. In addition, it has not included a satisfactory compliance margin even though EPA intends to require manufacturers to reproduce a passing grade through audit testing with imprecise test method. As explained above in Part IV.E.1, it is improper for EPA to impose audit testing requirements without first evaluating precision. Nonetheless, if EPA is going to hold

³³⁸ See, e.g., *Int'l Harvester Co.*, 478 F.2d at 645.

³³⁹ See Intertek Testing Services, NA Inc. Comment on Variability, at 7-8, *supra* n.183.

³⁴⁰ See Curkeet Ferguson, *supra* n.10.

manufacturers accountable through audit testing to reproduce a passing grade, it must not only analyze precision concerns, but also include a sufficient compliance margin.³⁴¹

With respect to representativeness, even assuming the scarce data points that EPA relies on demonstrate achievement of the proposed standards are a reliable predicate for standard-setting (which they are not), they likely are not robust indications of how well hydronic heaters will perform in the field under real world conditions. Again, once we eliminate data from testing with EN 303-05 data and the superseded Method 28 OWHH, EPA is left with *no* data points that suggest that 0.06 lb/MMBtu is achievable and just *three* data points suggesting the 0.15 lb/MMBtu is achievable. The remaining data points, however, come from testing with crib fuel using Method 28 WHH under conditions that do not correlate with field use of hydronic heaters. EPA has not referenced any data on the relationship between laboratory testing with crib fuel and real world use, where cordwood is the predominant fuel choice. Consequently, it is impossible to predict the impact that lowering lab-based test emission limits will have on actual hydronic heater emissions in the field. As HPBA articulated in its comments on EPA's proposed Subpart AAA revisions, the lack of representativeness is a significant issue. Certification test scores for woodstoves cannot be used to predict the relative performance of certified models and thus, by example, a woodstove with a certification value of 2.5 g/hr or below may not perform as well as a model with a certification value of 4.5 g/hr. EPA has no basis to expect that certification scores for hydronic heaters will be any more representative of performance in the field.

2. EPA Has Failed To Adequately Analyze Costs, and the Proposed Step 2 and Step 3 Standards Are Not Cost Effective

Again, the costs and cost-effectiveness of proposed emission standards are a central factor in determining BSER, pursuant to the CAA Section 111 requirement that EPA must consider “the cost of achieving such reduction and any non-air quality health and environmental impacts and energy requirements.”³⁴² EPA must ensure that its hydronic heater NSPS limits are not “exorbitantly costly in an economic or environmental way.”³⁴³

EPA's proposal does not adequately consider the significant costs of achieving emissions reductions with so low a ceiling on emissions from hydronic heaters. The proposed Step 2 and 3 emission limits would lead to costs that flatly unreasonable. This conclusion is supported by a separate cost-effectiveness analysis by NERA, HPBA's third-party consultant (Attachment 3 to these comments and summarized below), and by NERA's critique of EPA's cost and cost-effectiveness analysis (Attachment 11 to these comments and summarized below).³⁴⁴ The analysis described therein clearly demonstrates that cost considerations preclude implementation of EPA's current proposal as BSER and that EPA's own cost-effectiveness analysis does not

³⁴¹ See *Int'l Harvester Co.*, 478 F.2d at 632; see also *Portland Cement Ass'n*, 486 F.2d at 396, 401.

³⁴² 42 U.S.C. § 7411(a)(1).

³⁴³ *Essex Chem. Corp.*, 486 F.2d at 433.

³⁴⁴ NERA's qualifications are set forth in note 213 above.

have legs to stand on. Rather than attempt to recreate NERA's analyses here, we will instead briefly summarize the key findings below.

a. EPA's Analyses Are Fatally Flawed

EPA and its consultants performed various calculations related to compliance costs and emissions reductions for the proposed and alternative regulatory approaches for the various categories of hearth appliances. EPA's methodology for its regulatory impact analysis failed in a number of ways to follow governing EPA guidance.

In conducting its cost-effectiveness analysis, EPA departed from its own guidance (*Guidelines for Preparing Economic Analyses*³⁴⁵). The following table illustrates major deficiencies, which are explained in more detail in NERA's report.³⁴⁶

³⁴⁵ U.S. Environmental Protection Agency ("EPA"). 2010. *Guidelines for Preparing Economic Analyses*. December. [http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/\\$file/EE-0568-50.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf)

³⁴⁶ Again, EPA arbitrarily failed to explain its departure from its standard practice of basing cost-effectiveness values on a comparison of annualized costs and annual emission reductions in a single future year by including a cumulative assessment. See NERA Economic Consulting, ASSESSMENT OF EPA ECONOMIC ANALYSES FOR PROPOSED WOOD HEATER NEW SOURCE PERFORMANCE STANDARDS, at 4 (May 2014) (Attachment 11 to these comments); see also *Fox Television Stations, Inc.*, 556 U.S. at 514-15.

Summary of NERA’s Assessment of EPA Analyses for Proposed Wood Heater NSPS Relative to EPA Guidelines for Preparing Economic Analyses

	EPA Performed for Proposed Wood Heater NSPS?	
Incremental Cost-Effectiveness Analysis		
1. Specify several options (at least one less stringent and one more stringent than proposal)	No	No option more stringent than Proposal; only difference between Proposal and Alt. is timing
2. Develop compliance cost estimates based on stringency	No	No dependence on stringency for most costs
3. Develop emission reduction estimates based on stringency	Yes, but...	No accounting for large emission uncertainty
4. Incorporate market impacts into cost and emission reduction estimates	No	No demand, scrappage, or cons. surplus effects
5. Calculate incremental costs (least to most stringent)	No	No incremental analysis for decision-making
6. Calculate incremental emission reductions (least to most stringent)	No	No incremental analysis for decision-making
7. Calculate incremental cost-effectiveness (least to most stringent)	No	No incremental analysis for decision-making
Industry Impact Analysis	No	No estimates of industry jobs, closures, etc.
Economic Impact Analysis	No	No estimates of economy-wide jobs, GDP, etc.

As is the case for EPA’s analysis for woodstoves, the shortcomings in EPA’s cost-effectiveness analysis for hydronic heaters are fatal flaws that make it essentially useless for decision-making. In fact, NERA concluded that the errors and omissions are so fundamental that it would not be worthwhile for NERA to attempt to develop incremental analyses from the information that EPA provides, because the information itself has such a shaky basis.

EPA’s proposal also gives short shrift to one of the major findings of EPA’s cost analysis militating against a determination of cost-effectiveness: a high cost-to-sales ratio. In the proposed rule preamble, EPA concedes that, for hydronic heaters for the proposed regulatory approach, “the annualized cost-to-sales ratio is 3.3 percent.”³⁴⁷ However, the proposed rule glosses over this finding, ignoring EPA’s own recognition of its significance in the Regulatory Impact Analysis. There, EPA acknowledges that ratios below 1 percent “suggest the rule will not have a significant impact”³⁴⁸ For hydronic heaters, the cost-to-sales ratio was over three times this threshold value. Such a high value at least should have given EPA pause as to the extreme nature of the costs associated with the proposed rule’s Step 2 and 3 limits. In any case,

³⁴⁷ *Id.* at 6,360.

³⁴⁸ U.S. EPA, *Regulatory Impact Analysis (RIA) for Proposed Residential Wood Heaters NSPS Revision: Final Report*, EPA/R-13-004 (2014) at 5-15 [EPA-HQ-OAR-2009-0734-0364] (“RIA”).

and as NERA's analysis reveals, these costs are wholly out of proportion with the emissions actually captured under the proposed Step 2 and 3 standards.

b. NERA's Analysis Shows that EPA's Proposed Step 2 and 3 Standards Are Not Cost Effective

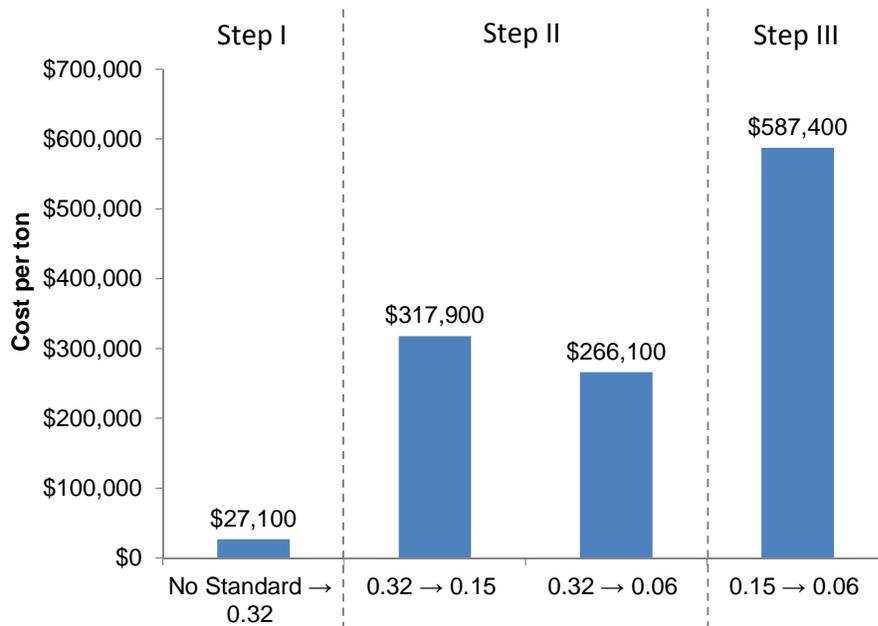
The full details on NERA's data inputs and methodology can be found in the appendices attached to their analysis, and we will not summarize those details here. In short, NERA evaluated the cost-effectiveness of increasingly stringent particulate matter emissions standards for hydronic heaters. Using detailed information on compliance costs and economic assessments consistent with EPA guidelines for economic analysis, NERA developed estimates of the incremental cost per ton for three NSPS.

1. Step 1 standard of 0.32 lb/MMBtu (the current Voluntary Program standard);
2. Step 2 standard of 0.15 lb/MMBtu or 0.06 lb/MMBtu; and
3. Step 3 standard of 0.06 lb/MMBtu (from a Step 2 standard of 0.15 lb/MMBtu).

The following figure summarizes the results of NERA's analysis. These results show that the Step 2 and Step 3 standards are much less cost-effective than the Step 1 standard of 0.32 lb/MMBtu. The cost per ton for the Step 1 standard of 0.32 lb/MMBtu is \$27,100 per ton,³⁴⁹ compared to an incremental cost of \$317,900 per ton for a Step 2 standard of 0.15 lb/MMBtu or \$266,100 per ton for a Step 2 standard of 0.06 lb/MMBtu (relative to the Step 1 standard). The incremental cost per ton for the Step 3 standard of 0.06 lb/MMBtu relative to the Step 2 standard of 0.15 lb/MMBtu is particularly costly, at \$587,400 per ton.

³⁴⁹ HPBA recognizes that this cost per ton value is significantly higher than what is normally deemed acceptable in rulemakings to establish NSPS for particulate matter. Nevertheless, because nine states have already imposed the 0.32 lb/MMBtu limit for hydronic heaters, and because the interest in national uniformity of standards is of paramount importance, HPBA supports EPA's conclusion that the Step 1 limit is BSER. Different federal standards would implicate even higher costs.

Cost-Effectiveness of Alternative Hydronic Heater NSPS



Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Hydronic Heater New Source Performance Standards

NERA used sensitivity analysis to assess the implications of changing the estimates used to calculate costs and annual emission reductions, including the underlying compliance cost estimates and the estimate of price elasticity of demand. Although the specific estimates of dollars per ton change under the sensitivity cases, none of the sensitivity cases modifies NERA’s basic conclusion, i.e., that the Step 1 standard of 0.32 lb/MMBtu is much more cost-effective than the Step 2 and Step 3 standards.

The following charts summarize the key details in NERA’s analysis:

NERA’s Estimated Impacts on Hydronic Heater Sales and Annualized Social Costs

	STEP I		STEP II		STEP III
	No Standard → 0.32 lb/mmBtu	0.32 → 0.15 lb/mmBtu	0.32 → 0.06 lb/mmBtu	0.15 → 0.06 lb/mmBtu	
Sales with demand effect	7,600	6,100	5,800	5,100	
Incremental social cost					
Compliance cost	\$28,424,000	\$15,166,000	\$17,852,000	\$11,866,000	
Consumer surplus deadweight loss	\$11,324,000	\$2,251,000	\$3,209,000	\$1,322,000	
Total cost	\$39,748,000	\$17,416,000	\$21,061,000	\$13,188,000	

Note: Baseline sales are about 13,100.

Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Hydronic Heater New Source Performance Standards

NERA’s Estimated Components of Annual Emission Reductions

	STEP I		STEP II		STEP III
	No Standard → 0.32 lb/mmBtu	0.32 → 0.15 lb/mmBtu	0.32 → 0.06 lb/mmBtu	0.15 → 0.06 lb/mmBtu	
Demand effect	-759	-22	-25	-7	
Compliance effect	-736	-42	-64	-21	
Scrappage effect	+30	+9	+10	+5	
Net emission change	-1,465	-55	-79	-22	

Note: “Demand effect”: Higher hydronic heater prices would cause sales to fall, reducing emissions.
 “Compliance effect”: Modification of hydronic heaters to meet NSPS is assumed to reduce emissions.
 “Scrappage effect”: Reduced scrappage of existing hydronic heaters would increase emissions.
 Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Hydronic Heater New Source Performance Standards

NERA’s Estimated Incremental Cost-Effectiveness of NSPS

	STEP I		STEP II		STEP III
	No Standard → 0.32 lb/mmBtu	0.32 → 0.15 lb/mmBtu	0.32 → 0.06 lb/mmBtu	0.15 → 0.06 lb/mmBtu	
Incremental social cost	\$39,748,000	\$17,416,000	\$21,061,000	\$13,188,000	
Incremental emission change	-1,465	-55	-79	-22	
Cost per ton	\$27,100	\$317,900	\$266,100	\$587,400	

Source: NERA calculations as explained in NERA’s report entitled Cost-Effectiveness Analysis of Alternative Hydronic Heater New Source Performance Standards

NERA’s detailed cost-effectiveness analysis again reveals the excessiveness of proposed rule’s costs, particularly when compared to the marginal emission reductions achievable at those costs. Especially in a small consumer-driven industry such as this, these cost-effectiveness estimates are far beyond what can possibly considered reasonable. These estimates alone preclude a determination in favor of EPA’s proposed Step 2 and 3 standards as BSER under CAA Section 111.³⁵⁰

The implications of the NERA analyses for the current proposal are obvious: that the proposal does not adequately consider costs, as required under CAA Section 111. As NERA’s analysis shows, even if, *arguendo*, the emission reductions implicated by a 0.15 lb/MMBtu or 0.06 lb/MMBtu limit would come at an unreasonably high cost, particularly in light of the still significant (and significantly less costly) reductions achievable with a 0.32 lb/MMBtu limit, which reflects 90% control. It is therefore no surprise that NERA has shown that each

³⁵⁰ Neither EPA’s nor NERA’s cost analyses account for the two key data quality issues identified above: (1) imprecision of laboratory test methods and (2) the possible lack of correlation between emissions measured in test labs and those generated by homeowners during real world usage. In short, because of these problems, EPA’s proposed Step 2 and Step 3 standards are likely to be *even less cost-effective* than NERA’s analysis has shown.

incremental reduction from the 0.32 lb/MMBtu level becomes even less cost-effective, unreasonable, and ultimately untenable from the standpoint of cost effectiveness.

C. EPA NEEDS TO ADDRESS TRANSITION ISSUES FOR HYDRONIC HEATERS

EPA plainly recognizes the need for manufacturers to have adequate lead time to redesign or modify appliance designs, test appliances in accordance with required test methods, and satisfy the requirements for certification.³⁵¹ EPA further acknowledges the possibility of “logjams” at certifying laboratories that will be faced with a high volume of requests for all appliance categories subject to Subparts AAA, QQQQ, and RRRR.³⁵² Inexplicably, however, the proposed rule does not contain *any* provisions that would allow for a smooth transition from the status quo to Subpart QQQQ regulation. Absent any grandfathering provisions, upon finalization of the proposal, manufacturers must stop selling hydronic heaters for months (or longer) as they scramble to test appliances and obtain certification in accordance with the final rule—a challenge made all the more daunting by the needless complexity of the proposed certification procedures (*see* Part IV.B), test method uncertainties (Part V), and the log-jam issues implicated by the many new appliance categories that will be regulated by the revised regulations. Instead of taking hydronic heaters out of commerce in this manner for a substantial (and certain to be industry-crippling) period of time, EPA must promulgate grandfathering and retail sell-through provisions, similar to those proposed for woodstoves, which would allow for the continued manufacture and sale of previously qualified low emissions hydronic heaters for a specified period of time following the effective date of the rule.

1. EPA Must Grandfather Qualified Hydronic Heaters

At a minimum, EPA should grandfather all existing models that are qualified under Phase 2 of the voluntary program until the expiration of the five year Phase 2 qualification period or two years after the effective date, whichever occurs later.³⁵³ To be eligible for the grandfathering

³⁵¹ *See, e.g.*, 79 Fed. Reg. at 6,332, 6,338, 6,339, and 6,364.

³⁵² *See id.* at 6,366, 6,370.

³⁵³ Manufacturers of Phase 2 qualified models that have put in quality assurance/control requirements would continue to be subject to those requirements throughout the transition period. *See* EPA HYDRONIC HEATER PROGRAM PHASE 2 PARTNERSHIP AGREEMENT [EPA-HQ-OAR-2009-0734-0100]. Under the current Phase 2 Partnership Agreement, manufacturers of qualified models must enter into contracts with certification bodies providing for the conduct of a quality assurance/control program. Manufacturers would then submit quality control plans to certifying bodies, which will determine whether the plans are adequate to assure that units within a given model line accurately reflect emission-critical components of the model line design. *See id.* at 13. Manufacturers are also subject to periodic audits by certifying bodies (in accordance with ISO-IEC Guide 65 and ISO-IEC Standard 17020) under the Phase 2 voluntary program. *See id.* at 15. Certifying bodies prepare audit reports identifying any deviations from the manufacturers’ quality control plans and specifying the requisite corrective actions. *See id.* Those reports are provided to EPA. *See id.* Finally, manufacturers of qualified models must promptly report to the certifying body and to EPA how it will respond to any deficiencies. *See* (Continued...)

period, manufacturers of hydronic heater model lines that meet the foregoing criteria would simply notify EPA (by the effective date of the final rule) as to what model(s) they intend to continue to manufacture and market during the grandfathering period and provide the necessary supporting documentation to confirm voluntary program qualification and state certification. Absent notification by EPA that a particular model is ineligible for the transition period (*e.g.*, through a cease and desist notice), manufacturers can manufacture and market appliances until the expiration of the grandfathering period.³⁵⁴

This type of grandfathering period is relatively modest, as many of these qualifications are likely to expire well before the end of the proposed Step 1 period. It is nevertheless vital to manufacturers' ability to remain in the marketplace while undertaking the necessary adjustments to comply with the various requirements set forth in the proposed Subpart QQQQ. It is also necessary to avoid crippling delays at certifying laboratories that must demonstrate their proficiency with new test methods (not knowable until promulgation), while also being deluged by certification requests pertaining not just to hydronic heaters, but all other appliance categories subject to the proposed rule.

2. EPA Must Provide Sell-Through Relief

In addition to establishing a grandfathering period for Phase 2 qualified models, EPA should give manufactures of those models an indefinite sell-through period, rather than limit retailers' ability to sell existing inventory. The findings in the analysis by Mr. Charlie Page,³⁵⁵ which is discussed in more detail in HPBA's comments on EPA's proposed woodstove standards (Part VI.C.2.b), are also applicable to Phase 2 qualified hydronic heater models. In particular, any deadline on the sale of controlled, grandfathered models will lead to stranded inventory and substantial economic harm. The "tail" of the distribution of Phase 2 qualified models, like that of previously certified woodstoves, will have *de minimis* environmental implications even if their sale is permitted indefinitely. By contrast, withholding sell-through relief will impose significant costs on manufacturers, distributors, and retailers, with minimal incremental emissions reductions.

Moreover, EPA should include a two-year sell-through provision for uncontrolled models to facilitate the transition to Subpart QQQQ regulation. EPA has indicated that the "subpart QQQQ

id. Manufacturers risk revocation of certification (by the certifying body) and/or qualification (by EPA) in the event of serious deficiencies or failure to take corrective action. *See id.* at 16.

Manufacturers of Phase 2 qualified models that have not put in place the aforementioned quality assurance/control plans can nevertheless rely on quality assurance/control plans they have put in place for safety listings for the duration of the grandfathering period. Such plans can serve a dual purpose given the overlap between safety-critical and emissions-critical components.

³⁵⁴ Furthermore, the labeling requirements that currently govern eligible models (under the Phase 2 voluntary program and state law) would continue to apply throughout the transition period.

³⁵⁵ *See* Attachment 7 to these comments.

requirements would not provide an additional time period for the sale of unsold units manufactured before the compliance date.”³⁵⁶ Yet, in discussing the proposed rule’s provisions governing woodstoves and pellet stoves, EPA recognized the importance of sell-through provisions because they “provide[] a reasonable transition for manufacturers to recoup their investment in their stock on hand.”³⁵⁷

EPA attempts to explain this difference in treatment by noting that, “[i]n the case of hydronic heaters, we believe that any delay of the compliance deadline for sales would also result in the sale and long-term use of non-complying units, with a potentially adverse [air] quality impact.”³⁵⁸ That explanation fails for two reasons. First, a number of states have unfairly demonized these appliances. Modeling studies conducted by the State of Maine show that even uncontrolled units with much higher emission rates can have acceptable, NAAQS-compliant ambient impacts with appropriate setbacks and stack heights.³⁵⁹

Second, EPA’s position with respect to hydronic heaters cannot be reconciled with the sell-through provisions in the existing Subpart AAA regulations and the Agency’s views (in 1988) concerning the transition to nationwide regulation of woodstoves under the NSPS. In 1988, the Agency faced the same possibility that the long term sale and use of non-complying, pre-NSPS woodstoves would have potentially adverse air quality impacts, yet it nevertheless included a two year sell-through provision. EPA believed those two years would allow manufacturers (and retailers/distributors) the chance “to recoup their investment in their stock on hand.” The same is true for hydronic heaters now, and EPA has arbitrarily failed to explain this reversal of its position.³⁶⁰

Failing to include sell-through provisions for hydronic heaters will have a profoundly negative economic effect on manufacturers, retailers, and distributors.³⁶¹ A significant percentage of hydronic heater units being produced and sold today are unqualified units. As a result of the proposed rule, many manufacturers will be forced to severely cut production in the late summer/early fall of 2014 because dealers will not want to risk purchasing units from manufacturers that they will not be able to sell at retail after May 2015. The devastating economic impact that withholding sell-through relief would have on the hydronic heater industry outweighs the potential environmental impact of allowing the sale of uncontrolled units for a period of time. This is particularly true given that many states already prohibit the sale of

³⁵⁶ 79 Fed. Reg. at 6,344.

³⁵⁷ See 79 Fed. Reg. at 6,365.

³⁵⁸ *Id.*

³⁵⁹ See Maine Air Dispersion Modeling – Summary for OWB ISC-PRIME Modeling, Round 2 (May 30, 2007) (Attachment 19 to these comments); see also ISC PRIME OWB Results, 3 Newest Scenarios (June 6, 2007) (Attachment 20 to these comments).

³⁶⁰ See *State Farm Mut. Auto. Ins. Co.*, 463 U.S. at 49-51; *Fox Television Stations, Inc.*, 556 U.S. at 514-15.

³⁶¹ See Page Report (Attachment 7 to these Comments), *supra* n.91.

uncontrolled hydronic heaters, which significantly limits the geographic scope of sell through relief in the revised regulations, and therefore its potential environmental impacts. In short, a sell-through provision will help soften the blow of having to transition to nationwide regulation under Subpart QQQQ.

VIII. COMMENTS ON PROPOSED WARM AIR FURNACE STANDARDS

BACKGROUND

Warm air furnaces (also called forced-air furnaces) are central heating appliances that typically burn cordwood or pellet fuel. These appliances use air to transfer heat throughout homes using a network of air ducts. Generally, manufacturers in the United States market two types of warm air furnaces: (i) those with adequate capacity to heat an entire home over the full range of heating demands;³⁶² and (ii) those that provide only supplemental heat and are often tied to a fossil-fuel fired or electric heating system.³⁶³ Furnaces that are capable of heating an entire home generally have much larger fireboxes (often twice as large or more) than those that function only as a supplemental heat source. Both types of warm air furnaces, however, must nevertheless be quite compact—particularly as compared to outdoor hydronic heaters—because homeowners typically place these appliances in basements and thus, they must be able to pass through a standard-size door opening.

Warm air furnaces are unique to the United States and Canada. Indeed, there are no other countries where homeowners commonly use such appliances.³⁶⁴ In the United States, warm air furnaces are currently exempt from regulation under existing Subpart AAA.³⁶⁵ In fact, these appliances are virtually unregulated with respect to particulate matter emissions.³⁶⁶ There is no EPA or state voluntary program for warm air furnaces that resembles the EPA voluntary program for hydronic heaters. And very few states and localities have regulated warm air furnaces to date. One such state that has is Washington. There, residential wood burning appliances must

³⁶² Sometimes, homeowners will also have backup fossil-fuel fired or electric heating systems to provide heat during milder temperatures or when they are away from their homes and unable to add wood to the warm air furnace.

³⁶³ Typically, when warm air furnaces that provide supplemental heat are in use, the primary heating system is dormant. If the warm air furnace does not meet heating demands, the primary system engages.

³⁶⁴ See 79 Fed. Reg. at 6,360 (“[F]orced air furnaces are not commonly used in Europe because they are considered to be an inferior technology for home heating in Europe; thus, we had no European candidate BSER to consider.”).

³⁶⁵ See 40 C.F.R. §§ 60.530 (exempting furnaces), 60.531 (defining “furnace” as “a solid fuel burning appliance that is designed to be located outside of ordinary living areas and that warms spaces other than the space where the appliance is located, by the distribution of air heated in the appliance through ducts”).

³⁶⁶ See 79 Fed. Reg. at 6,360 (observing that warm air furnaces “are not currently regulated in the U.S. (with the exceptions of broader bans or use limits on wood-burning appliances)”).

meet woodstove requirements and thus, the only warm air furnaces that can be sold there are actually EPA-certified woodstoves equipped with air jackets and blowers.

Currently, regulation of warm air furnaces in Canada is also somewhat limited.³⁶⁷ The Canadian Standards Association (“CSA”) established a voluntary consensus-based test method (CSA B415.1-10) that includes performance standards for warm air furnaces in March 2010. CSA B415.1-10, which is a cordwood-based test method, establishes a “passing grade” of 0.4 g/MJ for warm air furnaces, which translates to approximately 0.93 lb/MMBtu in English units. This CSA method, however, is not a regulation and not all of the Canadian provinces have adopted the method and its “passing grade.”³⁶⁸ Given that this test method is relatively new, only a handful of warm air furnaces have been listed as complying with the “passing grade” therein. The furnaces that have been listed are generally smaller appliances ($\leq 65,000$ Btu/hr delivered heat output³⁶⁹) produced by just a few Canadian manufacturers.

Simply put, CSA B415.1-10 is still in its infancy despite being finalized over four years ago. Moreover, very few (only three) accredited laboratories in the United States have experience testing warm air furnaces using CSA B415.1-10, and even those three laboratories have only tested two or three furnace models each.

EPA’S PROPOSAL

EPA proposes to regulate warm air furnaces for the first time in the new Subpart QQQQ. The proposed rule sets forth a single standard for all furnaces regardless of size and does not distinguish between those that burn cordwood and those that burn wood pellets.³⁷⁰ Under the proposed rule, there are two “steps” of standards for warm air furnaces. The proposed Step 1 standard (0.93 lb/MMBtu heat output—the CSA B415.1-10 “passing grade”) takes effect on the effective date of the final rule, although EPA has requested comment on a one-year extension of this deadline.³⁷¹ The proposed Step 2 standard (0.06 lb/MMBtu heat output—the same limit that EPA has proposed for hydronic heaters) takes effect five years after the effective date of the final rule (*i.e.*, the same effective date that EPA is proposing for the Step 2 standard for hydronic heaters).

³⁶⁷ See 79 Fed. Reg. at 6,360 (noting that warm air furnaces “are beginning to be regulated in Canada”).

³⁶⁸ Alberta, Saskatchewan, Manitoba, and Ontario have not yet adopted CSA B415.1-10. British Columbia, New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Quebec have adopted that method.

³⁶⁹ These smaller furnaces generally have fireboxes of less than six cubic feet.

³⁷⁰ As explained elsewhere in HPBA’s comments (Part III.A.4), if EPA does not distinguish between fuel types in setting standards, it must set a single standard based on combustion of the “dirtiest” fuel, which would be cordwood.

³⁷¹ 79 Fed. Reg. at 6,363.

EPA has also solicited comment on a different approach that would establish an Alternative Step 2 standard (0.15 lb/MMBtu heat output) that would take effect three years after the effective date of the final rule, and an Alternative Step 3 standard (0.06 lb/MMBtu heat output) that would take effect eight years after the effective date of the final rule. Again, this alternative proposal is identical to EPA’s Alternative Steps 2 and 3 proposals for hydronic heaters.

In its proposal, EPA specifies that CSA B415.1-10 will be used to determine compliance with the standards for certification of warm air furnaces at all steps. CSA B415.1-10, which is a cordwood-based test method, must be used to measure heat output (MMBtu/hr) and particulate matter emission rate (lb/MMBtu heat output). Although the text of the proposed rule does not make it clear that manufacturers need only test with cordwood at both Steps 1 and 2, the preamble clarifies that this is indeed what EPA has proposed.³⁷²

A. EPA’S PROPOSED STEP 1 STANDARD IS APPROPRIATE

HPBA agrees that the consensus-based CSA B415.1-10 is an appropriate reference method and that the 0.93 “passing grade” (Step 1)³⁷³ embedded in that method is an achievable limit that constitutes BSER for smaller warm air furnaces (*e.g.*, ≤65,000 Btu/hr delivered heat output). The 0.93 lb/MMBtu limit has been adequately demonstrated as achievable by manufacturers of smaller furnaces, taking into account its cost effectiveness and other relevant factors under Clean Air Act Section 111. For example, there are a few small furnace models already listed to this “passing grade” produced by Canadian manufacturers. Although HPBA agrees that the 0.93 lb/MMBtu limit is achievable for small furnaces, EPA has requested comment on a one year extension of the effective date for Step 1, and we believe that there must be at least a one-year extension for transitioning from the status quo to Subpart QQQQ, as discussed in Part VIII.C below.

Manufacturers of larger warm air furnaces, however, will need significant additional lead time—beyond the one year that EPA is considering—to comply with 0.93 lb/MMBtu. EPA

³⁷² See 79 Fed. Reg. at 6,347 (“We ask for specific comments on the appropriateness of using the CSA test method *in its entirety, including the use of cord wood instead of crib wood* that are used in current versions of Method 28 and Method 28 WHH.”) (emphasis added).

³⁷³ Oddly, the text of proposed § 60.5474(b)(3) imposes a particulate matter emission limit of 7.5 g/hr, which appears to establish the same “cap” for individual test runs as EPA has proposed for hydronic heaters, yet there is absolutely no discussion of that requirement anywhere in the preamble to the proposal. See, *e.g.*, 79 Fed. Reg. at 6,344, 6,360-61. HPBA presumes this language was inadvertently included in the text of the proposed rule and that it will not appear in the final rule. If, however, EPA’s inclusion of this language was intentional, there are a number of reasons why EPA cannot finalize that requirement: (i) EPA has not provided any justification for the requirement; (ii) g/hr cannot be correlated with lb/MMBtu and, in any event, lb/MMBtu should be the main, if not the only driver for BSER; and (iii) the 7.5 g/hr requirement is inconsistent with the CSA B415.1-10 “passing grade,” and EPA has not made any NNTAA exception findings for adding it. Regardless of why that language appears in the text of the proposed rule, it must be deleted prior to publication of the final rule.

clearly recognizes that “an element of the BSER determination includes reasonable lead time for R&D to develop and certify cleaner units.”³⁷⁴ Emphasizing the uniqueness of the NSPS source categories in this rulemaking, EPA has explained that “important elements in determining [] BSER include the significant costs and environmental impacts of delaying production while models with those systems are being designed, tested, field evaluated and certified.”³⁷⁵ This acknowledgement comes as no surprise given the D.C. Circuit’s recognition of the relevance of lead time in standards setting under Section 111.³⁷⁶

Despite the foregoing, EPA nevertheless wrongly determined that “limited or no R&D is needed to comply with the proposed Step 1 BSER standard[.]” for all warm air furnace manufacturers.³⁷⁷ It is HPBA’s understanding that there are currently very few, if any, large warm air furnaces either in Canada or the United States that are listed to the 0.93 lb/MMBtu “passing grade” in CSA B415.1-10. EPA’s preamble does not clearly indicate otherwise.³⁷⁸ Given the absence of data demonstrating that large furnaces can meet the Step 1 standard, and the invalidity of a technology transfer justification, EPA must allow manufacturers additional lead time—at least an additional year beyond the one year delayed effective date that EPA has solicited comment on—to come into compliance with the Step 1 standard. To be clear, HPBA does not contest whether the 0.93 lb/MMBtu “passing grade” constitutes BSER. But, given that these appliances lack a history of regulation and experience with voluntary programs, manufacturers need more lead time to conduct the necessary R&D to achieve the proposed Step 1 standard on a consistent basis. Additional lead time is also warranted given that very few laboratories have experience testing with CSA B415.1-10.

³⁷⁴ 79 Fed. Reg. at 6,364.

³⁷⁵ *Id.* at 6,334.

³⁷⁶ *See Portland Cement Ass’n*, 486 F.2d at 390-92. In that case, the D.C. Circuit made the following findings in the context of discussing the achievability of the emission standard at issue in that case:

The Administrator may make a projection based on existing technology, though that projection is subject to the restraints of reasonableness and cannot be based on ‘crystal ball’ inquiry. . . . [T]he question of availability is partially dependent on ‘lead time’, the time in which the technology will have to be available. Since the standards here put into effect will control new plants immediately, as opposed to one or two years in the future, the latitude of projection is correspondingly narrowed. If actual tests are not relied on, but instead a prediction is made, ‘its validity as applied to this case rests on the reliability of [the] prediction and the nature of [the] assumptions.’

Id. at 391-92.

³⁷⁷ 79 Fed. Reg. at 6,364.

³⁷⁸ *See id.* at 6,360.

B. EPA’S PROPOSED STEP 2/3 AND ALTERNATIVE STEP 2 STANDARDS ARE NOT BSER

Neither EPA’s proposed Step 2/3 standard (0.06 lb/MMBtu) nor its Alternative Step 2 standard (0.15 lb/MMBtu) are BSER because EPA cannot support its adequate demonstration finding under Clean Air Act Section 111. EPA lacks sufficient data from testing with the reference method (CSA B415.1-10) to support a finding that either of these standards has been adequately demonstrated for warm air furnaces. It is arbitrary for EPA to make an adequate demonstration finding on such a miniscule data set, especially where there is no indication in the rulemaking record that EPA considered the precision of CSA B415.1-10. Compounding these errors is EPA’s finding that “BSER for forced-air furnaces may be demonstrated at the same emission levels as for hydronic heaters.”³⁷⁹ That finding rests on the deeply flawed assumption that it is possible to transfer technology from hydronic heaters to warm air furnaces. EPA has overlooked important engineering and safety considerations that make such a technology transfer at best very difficult and possibly inappropriate.³⁸⁰

Not only is EPA unable to support its adequate demonstration finding, it has failed to adequately consider the cost effectiveness of its proposed Step 2/3 and Alternative Step 2 standards. These standards are almost sure to be “exorbitantly costly in an economic or environmental way” and thus, they do not meet the requirements of Section 111.³⁸¹

1. EPA Cannot Support Its Adequate Demonstration Finding

EPA is unable to make a robust finding of adequate demonstration with respect to either the Step 2/3 or the Alternative Step 2 standards for warm air furnaces. The preamble to the proposed rule contains a confusing, and even misleading, discussion of the number of manufacturers that have tested furnaces with CSA B415.1-10 and achieved 0.15 lb/MMBtu or 0.06 lb/MMBtu. EPA first refers to “one company” that has tested “two of their newest models” using CSA B415.1-10 and achieved emissions below 0.1 lb/MMBtu.³⁸² Later in that same paragraph, EPA observes that “only one U.S. manufacturer currently has models that have been tested by CSA B415.1-10 and shown to achieve” the same levels as EPA is proposing for hydronic heaters, but that statement is unacceptably vague and unsupported for several reasons: (i) EPA does not adduce any data to support its claims, nor clearly indicate whether those models can achieve 0.06 lb/MMBtu (as opposed to 0.32 lb/MMBtu); (ii) EPA does not specify how many models it

³⁷⁹ *Id.* EPA’s finding is based on a flawed assumption that hydronic heater technology can readily be transferred to warm air furnaces. *See* US EPA, Regulatory Impact Analysis (RIA) for Proposed Residential Wood Heaters NSPS Revision, Final Report [EPA/R-13-004] (January 2014) (Docket ID: EPA-HQ-OAR-2009-0734-0364), at 4-5 (“Forced air furnace designs able to meet the Alternative Step 2 and proposed Step 2 (Alternative Step 3) limits may be based on technology transferred from hydronic heater designs.”); *id.* at 9-17 (same).

³⁸⁰ *See NRDC v. EPA*, 655 F.2d 318, 331 (D.C. Cir. 1981) (requiring robust evidence to justify technology transfer; *see also* Part III of HPBA’s comments).

³⁸¹ *Essex Chem. Corp.*, 486 F.2d at 433.

³⁸² *See* 79 Fed. Reg. at 6,360.

is referring to; (iii) EPA does not clarify whether this U.S. manufacturer is the same entity as the “one company” referenced earlier in that same paragraph that tested “two of their newest models.”³⁸³ The very next paragraph of the preamble goes on to discuss how “the largest U.S. forced-air furnace manufacturer already has a catalytic model meeting 0.06 lb/MMBtu,” but that statement is demonstrably false. U.S. Stove is the largest manufacturer of warm air furnaces “by an overwhelming landslide.”³⁸⁴ U.S. Stove, however, has no models, catalytic or otherwise, that can achieve 0.06 lb/MMBtu.³⁸⁵ In fact, U.S. Stove does not yet have any furnaces currently listed to the CSA B415.1-10 “passing grade” of 0.93 lb/MMBtu. Thus, it is unclear which manufacturer EPA is even referring to or whether the manufacturer of the catalytic model is the same as the U.S. manufacturer that EPA referenced in the preceding paragraph that can purportedly achieve the levels that EPA is proposing for hydronic heaters. Given the lack of transparency and clarity, EPA should issue a supplemental notice of data availability that clearly discloses the data supporting the BSER determination for Step 2/3. Interested parties should be afforded additional time to comment on that data, rather than trying to unpack the confusing statements in this preamble.

Even if we construe the preamble to the proposed rule in EPA’s favor, there are at most two manufacturers that produce warm air furnace models that can purportedly achieve 0.06 lb/MMBtu, and one additional manufacturer that produces two models that can purportedly achieve 0.15 lb/MMBtu. This is too meager a dataset to base a finding of adequate demonstration for either the Step 2/3 or the Alternative Step 2 standards, particularly when taking into account EPA’s failure to consider test method imprecision.³⁸⁶ No one, including EPA, knows what the precision of CSA B415.1-10 is. HPBA expects precision to be poor for the reasons set forth in the Curkeet Ferguson study, principally the inherent variability of burning wood. The Curkeet Ferguson study revealed that the precision for the woodstove test method they analyzed was at best 3 g/hr (intra-lab) and 4.5 to 6.4 g/hr (inter-lab) at the 95% confidence level. CSA B415.1-10 involves not just particulate matter emissions, but also heat output determinations in air plenums—a much more challenging measurement than heat output determinations using water for hydronic heaters, which proved to be challenging enough in the early days of the controlled hydronic heater programs.³⁸⁷ Accordingly, it is reasonable to expect that the precision of CSA B415.1-10 will be even worse. Consequently, CSA B415.1-10 is unlikely to reliably distinguish between performance differences within the range of interest for the proposed warm air furnace standards. Compliance will effectively be a game of chance under these circumstances.

³⁸³ *Id.*

³⁸⁴ See COMMENT BY BRANDON BARRY, DIRECTOR OF ENG’G PRODUCT RESEARCH & TESTING DIV., U.S. STOVE CO. (Feb. 26, 2014) [EPA-HQ-OAR-2009-0734-0941], at 2.

³⁸⁵ *Id.*

³⁸⁶ See *Int’l Harvester Co.*, 478 F.2d at 645.

³⁸⁷ See REVIEW OF EPA METHOD 28: OUTDOOR WOOD HYDRONIC HEATER TEST RESULTS, Brookhaven National Laboratory, Prepared for New York State Energy Research and Development Authority (Sept. 2011) [EPA-HQ-OAR-2009-0734-0218].

Finally, EPA cannot support its assertion that BSEER for warm air furnaces may be demonstrated at the same emission levels as hydronic heaters.³⁸⁸ EPA has not accounted for numerous differences between warm air furnaces and hydronic heaters that would render any attempt to transfer technology infeasible and impracticable. As explained in the attached paper by Mr. Robert Ferguson, an HPBA consultant with decades of experience with hearth appliance product development, manufacturers of warm air furnaces must address safety and engineering considerations that are different (and perhaps more challenging) than those that hydronic heater manufacturers face.³⁸⁹ Hydronic heaters rely on water to transfer heat, whereas warm air furnaces rely on air. This seemingly simple distinction has important consequences. Water helps limit maximum surface temperatures during normal operations of hydronic heaters, as well as absorb excess heat without overheating adjacent combustible materials, which provides more tolerance in the event of temperature spikes when compared to warm air furnaces. Moreover, the vast majority of warm air furnaces are installed indoors and near combustible materials. Thus, extreme care must be taken to limit surface temperatures on the furnace itself as well as air plenums and ducting and also to contain combustible gases and smoke within a warm air furnace's firebox and venting system when the fuel load door is opened. Finally, given that most warm air furnaces are installed indoors and must be able to pass through standard door openings, there are height and width restrictions that limit manufacturers' ability to add enhanced combustion technology—manufacturers of outdoor hydronic heaters are not so limited. Mr. Ferguson describes these issues in more detail.

For all of these reasons, EPA has not adequately demonstrated that its proposed Step 2/3 and Alternative Step 2 standards for warm air furnaces are BSEER.

2. EPA Did Not Adequately Consider Costs or Support Its Finding that the Proposed Step 2/3 and Alternative Step 2 Standards are Cost Effective

EPA bears the burden of “taking into account the cost of achieving [a proposed level of emission reduction] and any nonair quality health and environmental impact and energy requirements” when setting standards under Clean Air Act Section 111.³⁹⁰ EPA has failed to meet that burden with respect to warm air furnaces. EPA's economic impact assessment is fatally flawed in a number of ways.³⁹¹ NERA's analyses provide numerous reasons why EPA's regulatory impact analysis (and the assumptions therein) are fundamentally erroneous as to

³⁸⁸ See 79 Fed. Reg. at 6,360.

³⁸⁹ See Robert W. Ferguson, EVALUATION OF EPA'S NEW WOOD HEATER NSPS COMPLIANCE DETERMINATION CONCEPT (May 1, 2014) (Attachment 1 to these comments).

³⁹⁰ 42 U.S.C. § 7411(a)(1); see also Part III of HPBA's comments.

³⁹¹ See NERA Economic Consulting, ASSESSMENT OF EPA ECONOMIC ANALYSES FOR PROPOSED WOOD HEATER NEW SOURCE PERFORMANCE STANDARDS (May 2014) (Attachment 11 to these comments). Although NERA did not prepare an independent cost effectiveness analysis for warm air furnaces, the many flaws that it identified in EPA's analysis apply to warm air furnaces as well.

woodstoves and hydronic heaters. NERA’s criticisms apply equally to warm air furnaces because the flaws in EPA’s analysis are not unique to other appliance categories.

As explained above, EPA’s assumption that it is appropriate and feasible to transfer technology from hydronic heaters to warm air furnaces is baseless. The inability to transfer technology undercuts EPA’s conclusion that the costs of compliance will be comparable for hydronic heaters and warm air furnaces fails.³⁹² Given that warm air furnace manufacturers have not had the nearly decade or so to develop emission-controlled appliances as hydronic heater manufacturers have had, it is implausible that the costs of compliance will be comparable. In any event, even if we assume that the costs are “comparable,” NERA has explained why EPA’s cost analysis for hydronic heaters was grossly inadequate. The same is certainly true for warm air furnaces.

Warm air furnaces typically cost around \$2,000 for whole house models and around \$1,000 for add-on furnaces. Even assuming EPA has not underestimated the price increases for manufacturing warm air furnaces (from \$900 to \$3,000)³⁹³ that are expected to result from the proposed rule, the effect on sales volumes would be catastrophic. Most, if not all, manufacturers of warm air furnaces are small businesses. EPA’s own estimate of the costs to comply with the proposed rule—which HPBA believes is too low—raises legitimate questions about the continued viability of the warm air furnace industry.³⁹⁴

C. TRANSITION PROVISIONS ARE VITAL TO THE SURVIVAL OF THE WARM AIR FURNACE INDUSTRY

The tools at EPA’s disposal to ensure a smooth transition include delayed effective dates, “grandfathering” of currently approved models, and “sell-through” provisions allowing distributors and retailers relief to sell uncontrolled models that are in channels of commerce as of the effective date of the final rule. As currently drafted, the proposed regulatory text does not provide for *any* of these. Rather, on the effective date of the final rule, no warm air furnaces can be manufactured or sold at retail unless they have been certified to the Step 1 standard. EPA has, however, sought comment on the appropriateness of a one-year extension of the effective date for these appliances.³⁹⁵ HPBA strongly believes that a one-year extension of the effective date is the absolute minimum relief that must be provided for manufacturers of smaller warm air furnace to transition to Subpart QQQQ regulation. A longer transition period—at least one additional year—will be needed for manufacturers of larger furnaces. HPBA also believes that an

³⁹² See *id.* at 6,350 (estimating identical R&D and certification costs); *id.* at 6,351 (estimating comparable price increases for manufacturing).

³⁹³ See *id.* at 6,351.

³⁹⁴ A number of HPBA member companies will be submitting their own comments that provide more detail concerning the expected economic impacts of the proposed rule. In addition, HPBA previously raised these and other issues to OMB on December 6, 2013. See EPA-HQ-OAR-2009-0734-0333).

³⁹⁵ See *id.* at 6,363 (seeking comment on a “1-year ‘adjustment’ period”).

extension of the effective date of the Step 1 standards must be coupled with a sell-through provision to avoid the potentially crippling economic impacts from stranding inventory. Finally, HPBA believes that any appliances that are listed to the CSA B415.1-10 “passing grade” as of the date of promulgation of the final rule ought to be “grandfathered” for manufacture and sale for a period of two years after the effective date of the final rule.

First, an extension of the effective date for warm air furnaces is vital for manufacturers of these appliances to conduct the requisite R&D and wade through the laboratory logjam to obtain certifications. As discussed above, warm air furnaces are virtually unregulated in the United States. Transitioning from almost no regulation to extensive regulation under Subpart QQQQ will be far more turbulent for warm air furnaces than hydronic heaters, as there has been no voluntary program for warm air furnaces, and test laboratories have little, if any, experience testing warm air furnaces using CSA B415.1-10, which presents new challenges in the critical area of heat output measurements. Even in Canada, where CSA B415.1-10 originated, regulation is just “beginning.”³⁹⁶ Under these circumstances, EPA cannot possibly consider warm air furnaces to be on equal footing as hydronic heaters for purposes of transitioning to regulation. A one-year transition period is the bare minimum that would be acceptable for small warm air furnaces (*i.e.*, the only appliances thus far that have been demonstrated as achieving the proposed Step 1 limit). Large warm air furnaces will require an even longer transition period given that there are very few, if any, such appliances listed to the 0.93 lb/MMBtu “passing grade” under CSA B415.1-10.

Second, EPA should add a two-year sell-through provision to the final rule. The preamble to the proposed rule states that “subpart QQQQ requirements would not provide an additional time period for the sale of unsold units manufactured before the compliance date.”³⁹⁷ EPA has not proposed any sell-through provision despite its recognition—for woodstoves and pellet stoves—that such a provision “provides a reasonable transition for manufacturers to recoup their investment in their stock on hand.”³⁹⁸ Failing to include a sell-through provision for warm air furnaces will have a devastating economic effect both on manufacturers and retailers.³⁹⁹ It bears emphasis that when EPA decided to regulate residential wood heaters for the first time under Subpart AAA in 1988, EPA plainly deemed it necessary to allow manufacturers the chance “to recoup their investment in their stock on hand” and that is why it included a two-year sell-through provision in those regulations.⁴⁰⁰ EPA has not articulated why it made/makes sense to provide sell-through relief for woodstoves and pellet stoves in 1988 (and again in the proposed rule), while withholding such relief from manufacturers of Subpart QQQQ appliances. EPA’s only explanation is that, “[i]n the case of hydronic heaters, we believe that any delay of the compliance deadline for sales would also result in the sale and long-term use of non-complying

³⁹⁶ *See id.* at 6,360.

³⁹⁷ 79 Fed. Reg. at 6,344.

³⁹⁸ *See* 79 Fed. Reg. at 6,365.

³⁹⁹ *See* Page Report (Attachment 7 to these comments), *supra* n.91.

⁴⁰⁰ *See id.*

units, with a potentially adverse [air] quality impact.”⁴⁰¹ But, the same was true in 1988, yet EPA still included a sell-through provision in the existing regulations. EPA has not adequately explained its abrupt reversal in position.⁴⁰² Given the likely crippling effect that the absence of a sell-through provision will have on warm air furnace manufacturers, distributors, and retailers, EPA should include such a provision in the proposed rule.

Third, EPA should grandfather whatever limited universe of warm air furnace models is listed by an accredited third party laboratory to the 0.93 lb/MMBtu “passing grade” under CSA B415.1-10 as of the date of promulgation of the final rule. The quality assurance/control components of the listing by an accredited third party laboratory would continue to apply throughout the grandfathering period. Additionally, grandfathered furnaces would have permanent labels that include both the safety listing and the CSA B415.1-10 listing. The grandfathering period would expire five years from the date of listing. Moreover, as explained in more detail in HPBA’s comments to EPA’s proposed woodstove standards and the accompanying analysis by Mr. Page (*see supra* Part VI.C.2.b), there should be an indefinite sell-through period for grandfathered models after the expiration of grandfathered status. EPA cannot justify the economic harm to manufacturers, distributors, and retailers of stranding inventory by touting incremental environmental benefits because there are none. To be eligible for grandfathering, manufacturers of listed furnaces would simply notify EPA (by the effective date of the final rule) that they intend to continue manufacture and marketing such appliances during the grandfathering period and provide the necessary documentation to confirm the CSA B415.1-10 listing. Such grandfathering relief would help facilitate a smoother transition to Subpart QQQQ regulation by, among other things, alleviating logjam issues at laboratories.

IX. COMMENTS ON LABELING AND CONSUMER SUPPORT PROVISIONS

EPA has proposed various changes to the ways that affected appliances are labeled and marketed to consumers, including changes to the requirements for permanent labels and owner’s manuals. In addition, EPA proposes to discontinue the use of temporary labels that are currently required to be affixed as hangtags to affected appliances. EPA also has requested comments on how to best assure that manufacturers, retailers, and online marketers of wood heaters only use valid certification data and not make exaggerated claims. Finally, it has asked for comment on whether to require CO monitors and has proposed that moisture meters be included with the sale of any affected hearth appliance. HPBA’s comments on these proposed changes and other related issues appear below.

A. EPA SHOULD REVISE ITS PROPOSED PERMANENT LABELING REQUIREMENTS.

EPA proposes to continue to require that each affected facility have a permanent label, but it proposes to change the requirements for permanent labels in various ways. The permanent label must be affixed to each affected wood heater manufactured on or after the date that the

⁴⁰¹ *Id.*

⁴⁰² *See State Farm Mut. Auto. Ins. Co.*, 463 U.S. at 49-51; *Fox Television Stations, Inc.*, 556 U.S. at 514-15.

applicable standards come into effect.⁴⁰³ As is the case in current Subpart AAA, permanent labels are “reports” to EPA on the compliance status of the unit. Moreover, as part of that Section 114 report, the placement of the permanent label is deemed to constitute the manufacturer’s representation that certification of compliance for the model line was in effect, that the manufacturer was conducting an appropriate quality assurance program, and that any wood heater individually tested for emissions met the applicable emission limits.⁴⁰⁴ Permanent labels must meet certain requirements under the proposed rule. For example, they must contain certain prescribed language specific to the appliance category and the standards that apply to the model line in question, be affixed in a readily visible or accessible location in such a manner that it can be easily viewed before and after the appliance is installed, be a certain size, be made of a material expected to last the lifetime of a wood heater, and be presented in such a way so as to remain legible for that lifetime.⁴⁰⁵

Permanent labeling has been part of the regulatory geography of Subpart AAA for over 25 years, and HPBA has no objection to EPA continuing its use in the revised regulations as a compliance tool. However, changes in some of EPA’s proposed new requirements are necessary.

1. EPA Must Delete Language Purporting To Require Homeowners to Cease Using Affected Wood Heaters After A Certain Time Period.

EPA proposes to prohibit the sale *or operation* of woodstoves certified to the proposed Step 1 standards after the effective date of its proposed Step 2/3 standards. That permanent label would state: “U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2015 particulate emission standards. Not approved for sale or operation after [5 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].”⁴⁰⁶

Permanent labels serve the limited purpose of communicating the compliance status of affected appliances. As such, they do not establish new requirements, but instead memorialize requirements established elsewhere in the NSPS. Since nowhere in the proposal does EPA even hint at proposing to establish cut-off dates for the use of affected appliances, we will give EPA the benefit of the doubt and assume that the language in question is a mistake that it will quickly correct. Nothing in Section 111 would authorize this radical step, and even assuming it did, EPA couldn’t make the necessary showings to support it. It is obvious that the economic impacts

⁴⁰³ See § 60.536(a); § 60.5478(a). All citations to the Code of Federal Regulations in these comments refer to EPA’s changes to those regulations in the proposed rule, 79 Fed. Reg. 6,330 (Feb. 3, 2014), unless otherwise specified.

⁴⁰⁴ See § 60.536(a)(5).

⁴⁰⁵ See § 60.536(a); § 60.5478(a).

⁴⁰⁶ § 60.536(b). EPA also has proposed similar labeling requirements governing the sale or operation for models certified to the 1990 particulate emission standards. That proposal suffers from a fatal flaw discussed elsewhere in our comments: EPA cannot attempt to change the existing NSPS requirements in a proposed rulemaking. See Part IV.F.5, *supra*.

would be catastrophic – no one would spend thousands of dollars to purchase an affected appliance, knowing that it could only be used for a few years.

The permanent labeling requirements in current Subpart AAA do, however, include language communicating deadlines for the manufacture and sale of affected appliances that are established in the regulation.⁴⁰⁷ HPBA has no objection to continuing this practice. Of course, the dates specified must accurately reflect the regulatory requirements in question. In that regard, HPBA notes that it has made a number of proposals for additional transitional relief, and the permanent labeling requirements need to reflect the decisions EPA makes in response to those proposals.⁴⁰⁸

2. Requiring the Permanent Label to Be Visible After Installation Is Infeasible for Some Appliance Types.

EPA should remove the requirement that the permanent label must be affixed in a readily visible or accessible location in such a manner that it can be viewed both before *and after* installation.⁴⁰⁹ Although HPBA agrees that that requirement may be appropriate for some affected appliances, EPA should not require that a permanent label be placed on the front (or otherwise visible part) of all types of affected appliances because this is infeasible for certain appliances that are used in household living areas (e.g., a certified fireplace insert installed in a family room). Although EPA intends to require visible labels to document the use of complying heaters that may be required by state and local rules and/or to determine the unit’s applicability to any future change-out programs,⁴¹⁰ that information may be obtained in other ways, such as in owner’s manuals and on manufacturer websites. Accordingly, EPA should allow for some flexibility in the placement of the permanent label, requiring it only to be visible after installation “where feasible.”

B. HPBA SUPPORTS DISCONTINUING THE USE OF HANGTAGS.

EPA proposes to discontinue the current requirement that affected appliances be affixed with temporary labels, also known as hangtags, when offered for sale. EPA intended those hangtags to enable prospective purchasers to compare the emissions performance and efficiency of different appliance models, and to help them make informed purchasing decisions.⁴¹¹ However, EPA no longer believes that those temporary labels are necessary because it has developed an education and outreach program that provides consumers with information to assist them in selecting the cleanest appliances, among other subjects.⁴¹² See <http://www.epa.gov/compliance/monitoring/programs/caa/woodheaters.html>. Consequently, EPA proposes to remove the

⁴⁰⁷ See 40 C.F.R. § 60.536(b), (c).

⁴⁰⁸ See Parts IV, VI.C.2, VII.C, and VIII.C to these comments.

⁴⁰⁹ See § 60.536(a)(3)(i).

⁴¹⁰ See 79 Fed. Reg. at 6,340.

⁴¹¹ See 79 Fed. Reg. at 6,340-41.

⁴¹² See *id.* at 6,341.

requirement for temporary labels on certified appliances and has specifically requested comment on that proposal.⁴¹³

HPBA supports discontinuing the use of hangtags. Hangtags have been a minor headache for retailers because of their tendency to become separated from the appliance on the sales floor. This made it necessary to maintain supplies of replacements, in order to insure compliance with the temporary label requirement. Moreover, experience has shown that instead of assisting consumers in making informed purchases, hangtags often confuse them.

We also believe that EPA is correct in concluding that hangtags have become obsolete with the advent of the internet and its widespread use among consumers. Accordingly, discontinuing the use of hangtags will not have any negative impact for the consumer, who will still be able to compare and select the cleanest wood heaters based on information available online and from other sources.⁴¹⁴

C. EPA CANNOT REGULATE MARKETING INFORMATION IN THE PROPOSED RULE.

EPA has requested comments on how to best assure that manufacturers, retailers, and online marketers of affected appliances make claims based only on valid certification data and not make exaggerated claims.⁴¹⁵ EPA also seeks comment on language that it should require manufacturers and retailers to provide to consumers to help explain the relative benefits of high-performing heaters versus low performing heaters.⁴¹⁶

Although protecting the quality of information provided to consumers is a laudable goal, and one that HPBA supports, it is one that falls under the purview of the Federal Trade Commission Act, 15 U.S.C. § 41, *et seq.*, and various state statutes, not the provisions of the Clean Air Act that govern this rulemaking. Nothing in Section 111 or elsewhere in Title I of the Clean Air Act relevant to NSPS gives EPA the authority to regulate or prescribe the content of consumer marketing materials.

⁴¹³ *Id.*

⁴¹⁴ While EPA has proposed to eliminate the temporary hang tag labeling requirement, EPA has solicited comment on whether it “should consider developing a voluntary labeling program for the cleanest of the clean.” 79 Fed. Reg. at 6,341. Such a program is unnecessary. As recognized by EPA, continuing efforts to better educate consumers, both through EPA’s BurnWise program and outside of it, already provide ample means of ensuring that consumers will have the information they need to make intelligent purchasing decisions. Given the well-documented precision issues associated with wood heater emissions measurement, and particularly the difficulty in distinguishing between similarly high-performing wood heaters, adding another labeling program (even a voluntary one) atop of permanent labeling and other applicable requirements only reignites confusion, without providing much meaningful new information.

⁴¹⁵ See 79 Fed. Reg. at 6,340, 6,341.

⁴¹⁶ *Id.* at 6,341.

We acknowledge EPA’s authority to use permanent labels to “report” pertinent compliance related information to the agency under CAA Section 114.⁴¹⁷ But EPA cannot regulate marketing information provided to consumers without an explicit grant of statutory authority. Where Congress has provided authority for EPA to venture into this area, it has done so explicitly. For example, CAA Section 207(c)(3)(C) provides that “the manufacturer shall indicate by means of a label or tag permanently affixed to such vehicle or engine that such vehicle or engine is covered by a certificate of conformity issued for the purpose of assuring achievement of emissions standards” *and* “shall contain such other information relating to control of motor vehicle emissions as the Administrator shall prescribe by regulation.”⁴¹⁸ The Energy Policy and Conservation Act, 42 U.S.C. § 6291, *et seq.*, also requires that EPA calculate average fuel economy for passenger automobiles and requires provision of this information to consumers. Manufacturers are required to attach labels regarding the fuel economy of their automobiles (along with the range of fuel economy for comparable automobiles) and dealers must maintain the labels.⁴¹⁹ In the context of the current rulemaking, EPA can claim no such authority under Clean Air Act Section 111. Instead, authority to address these issues resides in the existing array of Federal and State consumer protection laws.

Therefore, because the provisions in Title I of the Clean Air Act relevant to this rulemaking do not specifically grant EPA the power to regulate marketing materials for affected appliances, the existing array of consumer protection laws should apply to any consumer information and marketing of appliances otherwise affected by the proposed rule.

D. EPA SHOULD NOT REQUIRE REVISION OF LABELING AND MARKETING INFORMATION BASED ON EMISSIONS TESTING DURING EMISSIONS AUDITS.

The proposed rule provides for a revised emissions audit testing program.⁴²⁰ HPBA has commented extensively on those proposed changes.⁴²¹ One element of the proposal not addressed earlier was the proposal to revise labels and marketing information based on data generated in audit testing.

There should be no need for manufacturers to revise labeling and marketing information (or for EPA to change certification scores) if audit testing shows that a model line is compliant. The audit testing results could be higher or lower than the results from earlier certification testing, but in either case the data only illuminate what is already known – the range of uncertainty (imprecision) associated with the test method.

⁴¹⁷ See § 60.536(a); § 60.5478(a).

⁴¹⁸ 42 U.S.C. § 7541(c)(3)(C). See also Clean Air Act Section 611 (directing the Administrator to promulgate regulations to implement labeling requirements).

⁴¹⁹ 49 U.S.C. §§ 32904, 32908.

⁴²⁰ See § 60.533(n).

⁴²¹ See Part IV.E.

Even assuming that such revision was necessary, the proposal fails to provide standards for revisions, and fails to address other key implementation issues. For example, does the average of all test series (themselves weighted averages) control? How much time is allowed for such revision, both for EPA to make changes and for the manufacturer to revise labels and marketing material? What happens to affected appliances that are already in the stream of commerce?

E. EPA MUST CONTINUE TO RELY ON OWNER’S MANUALS TO GUIDE CONSUMERS ON PROPER INSTALLATION PRACTICES AND OPERATING PROCEDURES, BUT SHOULD CHANGE CERTAIN REQUIREMENTS.

The proposed rule retains the existing Subpart AAA requirements obligating manufacturers to provide consumers with an owner’s manual containing specific operating instructions, and requiring owners or operators to operate covered appliances in accordance with the owner’s manual, so as to ensure safe and appropriate homeowner use.⁴²² For twenty-five years, EPA has required manufacturers to address these subjects in an owner’s manual accompanying the sale of regulated appliances.⁴²³ HPBA supports the continued use of owner’s manuals to inform consumers about proper installation, operation, and maintenance of certified appliances.

EPA has proposed a few changes to the existing owner’s manual provisions. In the proposed rule, EPA continues to require that consumers follow proper operation practices as outlined in the owner’s manual, but has proposed making it clear that, to operate the appliance in accordance with the owner’s manual, only certain fuel types may be used. The manual will include a list of prohibited fuel types that create poor or hazardous combustion conditions and include requirements specific to pellet-fueled appliances.⁴²⁴ The proposed rule also requires that, not only must a person not operate an affected appliance in a manner inconsistent with the owner’s manual, but the owner’s manual should also clearly specify that operating the appliance in a manner inconsistent with the owner’s manual would violate the appliance warranty.⁴²⁵ Finally, EPA would require manufacturers to post current and historic owner’s manual on the manufacturer’s website, and provide them upon request to EPA.⁴²⁶ HPBA does not take issue with these new requirements. HPBA believes that these provisions offer an effective means of ensuring that consumers have the information they need to safely operate and maintain their appliances.⁴²⁷

⁴²² See 79 Fed. Reg. at 6,340-41; *see also id.* at 6,344 (proposing like requirements under Subpart QQQQ).

⁴²³ See 53 Fed. Reg. at 5,861; *see also* § 60.536(k) of the current NSPS.

⁴²⁴ See 79 Fed. Reg. at 6,341.

⁴²⁵ § 60.532(g); § 60.5474(g).

⁴²⁶ § 60.533(b)(9)(iii); § 60.536(f)(1); § 60.5478(f)(1).

⁴²⁷ EPA also has requested comment on ways to improve the delivery of information in the owner’s manual and whether different information might be useful to the consumer or the regulatory authority, but HPBA believes that the proposed owner’s manual provisions are (Continued...)

For the same reasons HPBA supports EPA’s proposed owner’s manual requirements, HPBA cannot support the promulgation of additional, “best burn practices” or other generally applicable operating requirements (for example, chimney height and draft specifications, moisture content limits, or visible emission limits).⁴²⁸ First, such specific work practice requirements are not authorized under Section 111, in light of EPA’s issuance of numeric performance standards applicable to all appliances covered under this rulemaking.⁴²⁹ Second, the federal enforceability of manufacturers’ appliance-specific installation and operation instructions is really the best and only way of ensuring proper use, taking into account inevitable appliance-specific variation in product design and operating issues. There is no “one size fits all” approach here. By broadly regulating the types of information that must be included within manufacturer owner’s manuals, and leaving it to manufacturers to “fine tune” installation, operating, and maintenance instructions to fit the unique requirements of particular models as EPA has done under the current Subpart AAA and has continued to do in this proposal, EPA more than adequately assures that consumers will have the information they need to operate covered appliances in a way consistent with promulgated emissions standards.

F. EPA SHOULD NOT REQUIRE THE PROVISION OR SALE OF ANCILLARY PRODUCTS, SUCH AS CARBON MONOXIDE (“CO”) MONITORS OR MOISTURE METERS, IN THIS RULEMAKING.

EPA has requested comment on whether it “should require CO monitors to help ensure proper operation of the heater and to reduce health and safety concerns for appliances that are installed in occupied areas.”⁴³⁰ Such a requirement is unnecessary from either an air quality or safety standpoint. CO monitors are often required under building safety codes, independent of wood heater use.⁴³¹ And where building codes do require them, such requirements are generally motivated by concerns about gas-burning appliances, not solid fuel-fired heaters. This approach makes perfect sense as a safety and practical matter: whereas malfunctioning gas appliances can silently produce CO without any visible or other signal, any CO spillage from a solid fuel heater will also include smoke, which would be visible in living spaces and also would trigger smoke detectors that are almost universally required in residential buildings. Therefore, requiring a CO monitor to be provided in conjunction with the sale of any solid fuel heater results in an unnecessary expense for manufacturers and consumers alike.

comprehensive and sufficient to convey the requisite information to consumers to allow them to operate affected appliances properly and efficiently.

⁴²⁸ See 79 Fed. Reg. at 6,341, 6,364.

⁴²⁹ See 42 U.S.C. § 7411(h)(1), (4).

⁴³⁰ 79 Fed Reg. at 6,363.

⁴³¹ CO alarms, which are regulated by the U.S. Consumer Product Safety Commission, are required in all new residential construction under the International Code Council’s 2012 International Residential Code, which has been adopted by many states, including California and Washington. See, e.g., IRC 2012 Sections R315.1, R315.2, R.315.3, R315.4.

EPA has also proposed “to require commercial owners (direct distribution manufacturers and retailers) to provide a moisture meter with the wood heater at the time of sale.”⁴³² EPA has more than adequate means at its disposal to ensure the use of dry wood without having to burden manufacturers or others with providing a moisture meter, a tool of limited assistance to the average consumer.

Consumer-grade moisture meters have very short probe lengths, rendering them capable of only measuring surface moisture, which is an inadequate basis for characterizing the moisture content of the piece of firewood being evaluated. In light of this limitation, all they can really do is deal with extreme cases (*e.g.*, very wet wood), which can be avoided if good purchasing and wood stewardship practices are adhered to. Existing consumer education programs (such as EPA’s BurnWise website), coupled with sound owner’s manual instructions, together are more than capable of providing needed guidance to consumers on buying seasoned wood and storing it properly. Under these circumstances, the additional costs associated with requiring a moisture meter simply are not warranted.

X. COMMENTS ON OTHER ISSUES

In the proposal preamble, EPA expressly asked for comment on a great many issues. Many of these comment requests are addressed in the earlier sections of HPBA’s comments. This section addresses additional requests that are not germane to the topics addressed in other sections.

A. EFFICIENCY AND CARBON MONOXIDE (“CO”) STANDARDS

EPA has solicited comment on whether it should establish efficiency and/or CO standards for hearth appliances subject to this rulemaking.⁴³³ HPBA agrees with EPA’s determination that the promulgation of efficiency or carbon monoxide standards would be inappropriate at this time, and further supports EPA’s proposal to require testing and reporting of efficiency and CO test data instead.⁴³⁴ As addressed in prior HPBA submissions that are in the rulemaking docket,⁴³⁵

⁴³² *Id.* at 6,364. EPA also requests comments on related additional operational requirements, “such as the moisture content of the wood.” *See id.* As discussed elsewhere in these comments, such operational and work practice requirements are not authorized by Section 111 where, as here, EPA is promulgating specific numeric performance limits for the appliances at issue. *See* 42 U.S.C. § 7411(h)(4).

⁴³³ *See, e.g.*, 79 Fed. Reg. at 6,340.

⁴³⁴ *See id.*

⁴³⁵ *See, e.g.*, PROPOSED REVISIONS TO THE NSPS FOR RESIDENTIAL WOOD HEATERS – INDUSTRY PERSPECTIVE (SLIDES) (Oct. 11, 2012) [EPA-HQ-OAR-2009-0734-0270], at Slide 44 (“EPA found 25 years ago that separate standards for CO were not needed” as “PM controls that require improvements in combustion efficiency would also improve CO.”); *id.* at Slide 45 (EPA technological feasibility and cost effectiveness analyses do *not* address and therefore cannot support standards for efficiency); NOTES FROM MEETING WITH HPBA & USEPA AT RTP, NC (Oct. 30, 2012) [EPA-HQ-OAR-2009-0734-0127], at 2 (“Overall efficiency, unlike combustion (Continued...)”)

there is neither any need for nor data to support the establishment of such standards at this time. CO emissions are adequately addressed through EPA's proposed PM standards, and existing, limited efficiency data does not support the establishment of efficiency standards.⁴³⁶ Under EPA's proposed approach, consumers will have access to efficiency data through EPA's compliance monitoring website, or this information may be made available on EPA's BurnWise website.⁴³⁷ Such reporting and disclosure of this information appropriately serves the goal of facilitating informed purchasing decisions, and fostering continued technological advancement.

B. SMALL BUSINESS REGULATORY ENFORCEMENT FAIRNESS ACT ("SBREFA") PANEL REPORT

As discussed in the preamble, EPA convened a Small Business Advocacy Review ("SBAR") Panel under the Small Business Regulatory Enforcement Fairness Act ("SBREFA") "to obtain advice and recommendations of representatives of the small entities that potentially would be subject to the rule's requirements."⁴³⁸ The Panel was convened on August 4, 2010, and produced its final report in August 2011.⁴³⁹

As an initial matter, we remind EPA that the SBAR Panel was badly fragmented, with two members (the SBA and OMB panelists) voicing concerns often separate and different from those of the EPA panelist.⁴⁴⁰ This divide underscores the importance of the issues at stake, and the many aspects of this rulemaking demanding the Agency's serious attention.

efficiency, is not a surrogate for CO emissions, does not correlate to particulate emissions, and is not necessarily precisely measured – an furthermore including overall efficiency in standard would eliminate ~ 1/3 of models that currently meet 4.5 g/hr standard. . . . Overall efficiency . . . should not be added to the standard, but rather merely disclosed to the consumer . . . , which will allow marketplace pressure to drive efficiency improvement and thereby achieve efficiency goals in a few years without the need for enforcement.”)

⁴³⁶ See generally, e.g., Robert W. Ferguson, AN EVALUATION OF OVERALL EFFICIENCY FOR EPA CERTIFIED NON-CATALYTIC WOOD HEATERS (July 21, 2011) [EPA-HQ-OAR-2009-0734-0318].

⁴³⁷ 79 Fed. Reg. at 6,341, 6,363.

⁴³⁸ 79 Fed. Reg. at 6,369.

⁴³⁹ See FINAL REPORT OF THE SMALL BUSINESS ADVOCACY REVIEW PANEL ON EPA'S PLANNED PROPOSED RULE: REVISED STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS (Aug. 3, 2011) [EPA-HQ-OAR-2009-0734-0335] ("SBAR Panel Final Report").

⁴⁴⁰ See *id.* at, e.g., 42 ("SBA and OMB believe . . . that they cannot conclude that a nationwide NSPS limit on many categories would be the preferred approach."), 43 ("EPA believes that the absence of complete information at this time should not preclude consideration of regulatory options that may turn out to be viable."), 44 (SBA and OMB suggest considering regional or state action in lieu of NSPS, or voluntary programs; "EPA does not agree"), 44 (SBA and OMB recommend not moving forward with standards for numerous categories, while "EPA does not agree with the scope of this recommendation"), 44 (SBA and OMB urge further review if the proposed rule includes categories other than wood heaters; "EPA does not agree").

With respect to the report’s findings, HPBA agrees with many of the concerns raised by members of the SBAR Panel and is troubled by EPA’s failure to meaningfully address them. For example, the SBA and OMB panelists were concerned that “it was unclear whether adoption of a more stringent standard for new sources would slow the adoption of new, cleaner burning heaters, potentially delaying improvements in air quality.”⁴⁴¹ The Panel as a whole specifically called for EPA to “consider reviewing . . . the intra- and inter-lab precision, and the importance of this variability in determining emission standards,”⁴⁴² and the EPA panelist recommended that the Agency consider “using the ASTM emission test procedure [then] being developed for [hydronic heaters with] heat storage options, as appropriate.”⁴⁴³ The full Panel further recognized the need for “flexibilities that will most directly minimize the small business burdens” in achieving compliance with the rule.⁴⁴⁴ Yet the proposed rule and preamble barely acknowledge the change-out implications of EPA’s proposed standards (much less consider them in the course of standard-setting),⁴⁴⁵ fail to adequately account for well-known measurement uncertainty,⁴⁴⁶ ignore or inappropriately “Christmas Tree” relevant voluntary consensus test methods,⁴⁴⁷ and overlook much-needed transitional support for manufacturers of products other than woodstoves currently regulated under Subpart AAA.⁴⁴⁸

Not only has EPA failed to adequately address many of these issues, but EPA’s current proposed rule – a proposal materially different from the one considered by the SBAR Panel roughly three years earlier – further aggravates many of the concerns originally identified, and adds to them in ways the Panel has not been afforded an opportunity to consider. In 2011, EPA’s anticipated NSPS differed vastly from what has now been proposed, and, in particular,

⁴⁴¹ 79 Fed. Reg. at 6,370; *see also* SBAR Panel Final Report, *supra* n.439, at 40-41, 43.

⁴⁴² SBAR Panel Final Report, *supra* n.439, at 45.

⁴⁴³ *Id.* at 46.

⁴⁴⁴ 79 Fed. Reg. at 6,370; SBAR Panel Final Report, *supra* n.439, at 42; *see also id.* at 43 (recommending further consideration of “exemptions, phase-in, voluntary programs, credits/averaging at the manufacturer or regional level, and other approaches prior to proposing any emissions standards”).

⁴⁴⁵ *See* 79 Fed. Reg. at 6,338 (“The EPA continues to encourage state, local, tribal, and consumer efforts to changeout (replace) older heaters with newer, cleaner, more efficient heaters, but that is not part of this federal rulemaking.”); *see also* Section VI(B)(3), *supra* (discussing important change-out implications of the proposed rule’s woodstove emission standards, and need for their consideration in establishing wood heater emission limits).

⁴⁴⁶ *See* Section VI(B)(1), *supra* (discussing precision issues in measuring woodstove emissions, and implications with respect to EPA’s standard-setting).

⁴⁴⁷ *See* Section V(C)(2)(b), (c), *supra* (discussing importance of NTTAA compliance, and deviations from accepted consensus methods, including ASTM’s E2618-13 Annexes for full and partial thermal storage models).

⁴⁴⁸ *See* Part IV.F.1 *supra* (discussing needed transitional provisions for all categories of appliances).

contemplated significantly less stringent emission limits for all categories subject to EPA's rulemaking.⁴⁴⁹ For example, as far as the SBAR Panel knew, EPA was considering options that could lower catalytic woodstove emissions limits to as low as 2.0 g/hr.⁴⁵⁰ The Panel was never apprised of the possibility that EPA would eliminate the technology-based subcategorization scheme in Subpart AAA, and was not apprised of a further tightened standard, such as the 1.3 g/hr Step 2 limit proposed for all woodstoves. Given that the Panel was already concerned with ensuring that the NSPS not slow change-out of uncertified stoves and adequately consider test method precision issues, we can only assume that the Panel would be even more troubled by EPA's proposed, more stringent Step 2 limits.

EPA's proposed rule reflects a profound shift in the Agency's thinking from the proposal considered by the Panel, including major changes in the stringency of the emissions standards proposed and how compliance would be measured. By so dramatically altering the basic outlines of its proposal – without any additional Panel input – the proposed rule effectively makes a mockery of SBREFA review. If SBREFA is to have any meaning at all, there must be some basic confidence among participants in the process that the rulemaking they have been convened to consider is indeed the rulemaking the agency is considering.⁴⁵¹ And where the agency changes its mind as to basic elements of the proposal affecting a rulemaking's small business impact, participants in the process should have the opportunity to provide renewed input. Indeed, the OMB and SBA Panelists themselves urged the opportunity for additional review if EPA were to further consider regulation of wood heater categories in addition to woodstoves, but were denied such opportunity.⁴⁵²

⁴⁴⁹ See, e.g., U.S. EPA, “2/15/11 DRAFT – Draft Options Being Considered for Revision of Residential Wood Heaters NSPS” (“Feb. 2011 EPA Draft Options Document”), <http://www.epa.gov/burnwise/pdfs/20110215NSPSDraftOptionsTable.pdf>.

⁴⁵⁰ SBAR Panel Final Report, *supra* n.439, at 9. There are likewise major discrepancies between how EPA planned on regulating other wood heater categories and what EPA has now proposed. Originally, EPA was considering a limit for outdoor hydronic heaters and forced air furnaces as low as 0.15 lb/MMBtu heat output – a limit more than double EPA's now-proposed Step 2/3 limit for both categories (0.06 lb/MMBtu heat output). *Id.* at 10; see also Feb. 2011 EPA Draft Options Document, *supra* n.449, at 1.

⁴⁵¹ See, e.g., 5 U.S.C. § 609(b)(5) (referencing 5 U.S.C. § 603(b)-(c)). This provision requires small business panels to report on issues including, for example, “small entities to which the proposed rule will apply,” “projected reporting, recordkeeping and other compliance requirements of the proposed rule,” potential alternative “compliance or reporting requirements or timetables,” and “clarification, consolidation, or simplification of compliance and reporting requirements.” See *id.* To report meaningfully on these and other issues, the information provided to small business panels must reflect the rulemaking the agency actually intends to promulgate.

⁴⁵² 79 Fed. Reg. at 6,371 (“Two Panel members recommended that if the EPA decides to later pursue regulation of categories other than certified wood heaters, the EPA should convene another Panel to address those subcategories at the appropriate time.”); see also SBAR Panel (Continued...)

The flaws in the SBREFA process ultimately underscore the need for EPA to reconsider various aspects of the proposed rule. Ideally, EPA would reconvene the SBAR Panel to provide for further small business review in light of the many components of the proposal that the Panel was unable to consider in its earlier review. In any event, EPA must take to heart the significant concerns raised by the SBAR Panel, many of which further support HPBA's own substantive comments on this rulemaking.

Final Report, *supra* n.439, at 42 (EPA “did not adequately inform the [Small Entity Representatives] about the other categories” of regulation aside from certified wood heaters.).

ATTACHMENTS TO HPBA COMMENTS

Attachment	Title
1	Robert W. Ferguson, EVALUATION OF EPA’S NEW WOOD HEATER NSPS COMPLIANCE DETERMINATION CONCEPT (May 1, 2014)
2	NERA Economic Consulting, COST-EFFECTIVENESS ANALYSIS OF ALTERNATIVE WOODSTOVE NEW SOURCE PERFORMANCE STANDARDS (May 2014)
3	NERA Economic Consulting, COST-EFFECTIVENESS ANALYSIS OF ALTERNATIVE HYDRONIC HEATER NEW SOURCE PERFORMANCE STANDARDS (May 2014)
4	Robert W. Ferguson, SOLID-FUEL BURNING WARM AIR FURNACE TECHNOLOGY TRANSFER (Apr. 24, 2014)
5	Myren Consulting, Inc., “Comparison of Myren Consulting, Inc. EPA Test Report Weighted Averages with EPA Certification Values” (Apr. 1, 2014)
6	OMNI-Test Laboratories, Inc., “Comparison of OMNI-Test Laboratories, Inc. EPA Test Report Weighted Averages with EPA Certification Values” (Apr. 21, 2014)
7	Charles Page, JumpStart Marketing, HPBA RETAILER SURVEY RESULTS – INVENTORY AND RETAIL SELL-THROUGH TRENDS (May 1, 2014)
8	Rick Curkeet, “ASTM Standards Development” (undated)
9	Rick Curkeet, PE, “Response to Puget Sound Clean Air Agency ‘Preliminary Review of Analysis of NSPS Test Method Variability (Curkeet, 2010)’ (Dr. Phil Swartzendruber, 2012)” (undated)
10	James E. Houck, Ph.D., “Review of the Puget Sound Clean Air Agency December 5, 2012 letter to Mr. Stephan D. Page of the Office of Air Quality Planning and Standards U.S. Environmental Protection Agency” (Apr. 3, 2013)
11	NERA Economic Consulting, ASSESSMENT OF EPA ECONOMIC ANALYSES FOR PROPOSED WOOD HEATER NEW SOURCE PERFORMANCE STANDARDS (May 2014)
12	RTP Environmental Assocs., Inc., “Review of NYSDEC Modeling Study for NESCAUM Model Rule and NAAQS Compliance Evaluation for EPA Voluntary Phase 1 Compliance Outdoor Hydronic Heater” (Aug. 21, 2007)
13	Tech Environmental, Air Quality Dispersion Modeling of the E-Classic 2300

Attachment	Title
	Outdoor Wood Hydronic Heater (July 2012)
14	Memorandum from Dr. Rick Reiss, Exponent, to Allan Cagnoli, Hearth, Patio & Barbecue Association, Review of NESCAUM wood smoke monitoring proposal (Dec. 3, 2009)
15	Dirigo Laboratories, Inc., MODEL KB125 EPA QUALIFICATION TESTING PROJECT # 024-HH-1-REVISION 2 PREPARED FOR HARDY MANUFACTURING (undated)
16	Hardy Manufacturing, PARTIAL THERMAL STORAGE HYDRONIC HEATER TESTING SUMMARY (AVAILABLE DATA AS OF 11/1/12)
17	Central Boiler, Comparison of EN303-5 & EPA Method 28 WHH Results From a WHH Tested to both Methods (Apr. 22, 2014)
18	Woodmaster, TEST RUNS USING AN ASTM DRAFT PROTOCOL (ASTM E2618-13 ANNEX A-2) (May 2010-Apr. 2012)
19	Maine Air Dispersion Modeling – Summary for OWB ISC-PRIME Modeling, Round 2 (May 30, 2007)
20	ISC PRIME OWB Results, 3 Newest Scenarios (June 6, 2007)