

# ***There's a Freight Train Comin' !***

*The long-anticipated EPA review of its own regulations of wood heaters is right around the bend. If past is prologue, the agency's actions once again could change the hearth industry – dramatically.*

**Within the next three to five years there may be a profound change in the hearth industry. Succinctly put, nothing less than the very business complexion of nearly all wood-burning hearth industry manufacturers, distributors, retailers and service providers is in the balance. In a very real sense our fate is in the hands of the U.S. Environmental Protection Agency.**

**T**hat freight train heading down the tracks is called the “New Source Performance Standard” (NSPS). NSPS’s are regulations, developed under the Federal Clean Air Act of 1970, that “are issued for categories of air-pollutant sources that cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health or welfare.” Further, “an NSPS requires these sources to control emissions to the level achievable by best demonstrated technology or BDT...”

The U.S. EPA has published NSPS’s for over 90 source types since 1971, with the NSPS for “Residential Wood Heaters” being the last one promulgated on Feb. 26, 1988. The NSPS is why wood-fired heaters must be certified to be legally sold in the U.S. today. It is also notable that each NSPS is supposed to be officially reviewed at least once every eight years. So...the residential wood-fired heater NSPS is way overdue for review and the U.S. EPA is now anxious to start the process.

Not only are the rules of engagement likely to change for freestanding wood stoves, fireplace inserts and pellet stoves now regulated by the current NSPS, but other residential solid-fueled devices also may be included in the new NSPS coming down the tracks. These other types of residential heaters might include hydronic heaters, furnaces, masonry heaters, cookstoves, those cordwood and pellet stoves currently exempt from the existing EPA rules, and even fireplaces, coal stoves and corn-burning stoves. It is still unclear how encompassing the new regulations may be. At the time of this writing (beginning of November) the industry is anxiously waiting for EPA to formally make its intentions known.

There is one thing that can be said for certain: If the U.S. EPA is serious about revising the current NSPS, there will be a huge flurry of activity during the next two to five years. Unquestion-

ably, there will be many, many industry meetings hosted by the HPBA for its affected members; there will be many, many internal company meetings to develop business plan adjustments that will be needed in order for companies to cope with all of the expected changes to federal, state, local and even tribal air quality regulations around the country; there will be stakeholder meetings between private and public sector parties; and there will be meetings between the EPA and their contractors charged with compiling stacks of relevant information needed for drafting the proposed rule changes and for managing all of the information that could be needed for potential litigation.

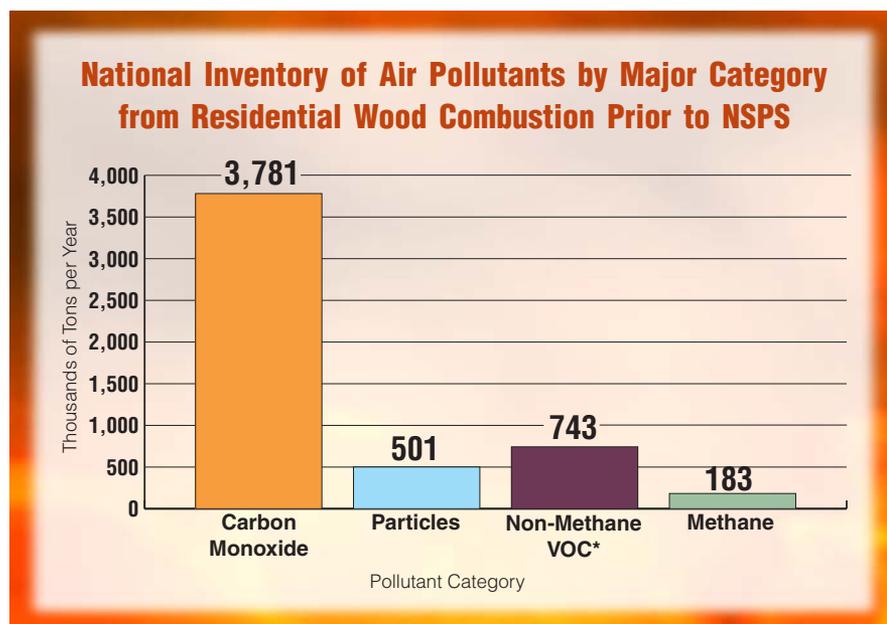
There will also be some pretty heavyweight and unavoidable political posturing that will take place. On top of all that, there is likely to be a flood of comments filed by environmental and health-related consumer protection watchdog groups.

The process will start out with the “Federal Register” publication announc-

ing EPA’s intent to revise the current NSPS for solid fuel-fired heaters. Then there will be opportunities for public comment, press releases and hearth industry-sponsored research projects with white paper publications. The process virtually will be a government jobs creation activity; it will employ a lot of attorneys, scientists, regulators, policy makers, environmentalists, government administrators, planners, engineers, economists, businessmen, health specialists, air quality specialists and politicians; and very importantly – it will cost us all a lot of money, directly from our costs to participate and indirectly from the burden it puts on taxpayers.

Again, it is still unclear where it all might lead. At one end of the spectrum, the new NSPS may be little different than the current NSPS with the *status quo* more or less prevailing or, we suppose, there is at least a very small possibility that the anticipated NSPS review and subsequent revision may be dropped altogether by EPA. On the other end of the spectrum, it may shake our industry to its financial core, creating extreme hardships for some of us but new opportunities for others.

To get some sense of reality we have analyzed some of the more obvious issues, ramifications and history of the current NSPS in the remaining part of this article. We also have explored the current thinking among experts about what a new wood-fired heater NSPS might entail, although it’s still early in the process.



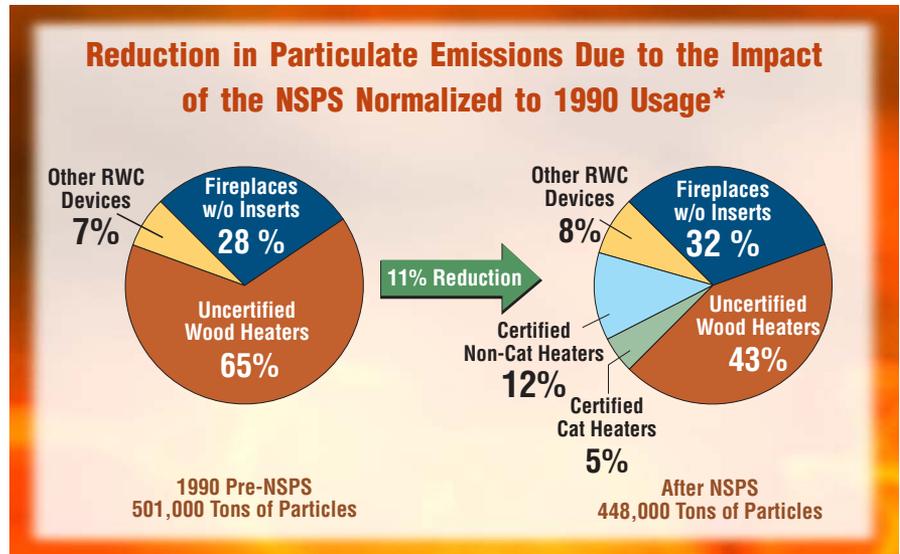
(1990 EPA data). \*VOC = volatile organic compounds.

### Why would residential heating with solid fuel be a target for environmental regulations?

Let's get straight to the point – there is no way to avoid the fact that residential solid fuel combustion emits air pollutants and by the very nature of wood-fired heaters, their air emissions end up concentrated at near-ground-level in residential areas. It would be irresponsible for regulatory agencies not to take a hard look at home heating, particularly wood-fired home heating as wood dominates among the solid fuel types typically used.

Incomplete solid-fuel combustion produces carbon monoxide (CO), fine particles (actually condensation droplets and solid aerosols also known as respirable particles or PM<sub>2.5</sub>) and volatile organic compounds (VOC). A number of organic compounds known to be a threat to human health – and imprecisely referred to as air toxics – are contained in the fine particles and are also part of the VOC list.

Unfortunately, unlike thousand-foot high industrial smoke stacks, home-heating emissions are released at elevations from 15 to 35 feet above local area ground levels, which makes it difficult to avoid exposing local residents to the potential nuisance as well as the potentially hazardous pollutants. Further, most homes in North America exchange inside and outside air at least once every several hours, providing a pathway for what's in the air outside to get inside.



*\*(The estimated reduction assumes the number of households using wood as a fuel remained constant since 1990). RWC = Residential Wood Combustion.*

### Has the current NSPS been effective in reducing pollution?

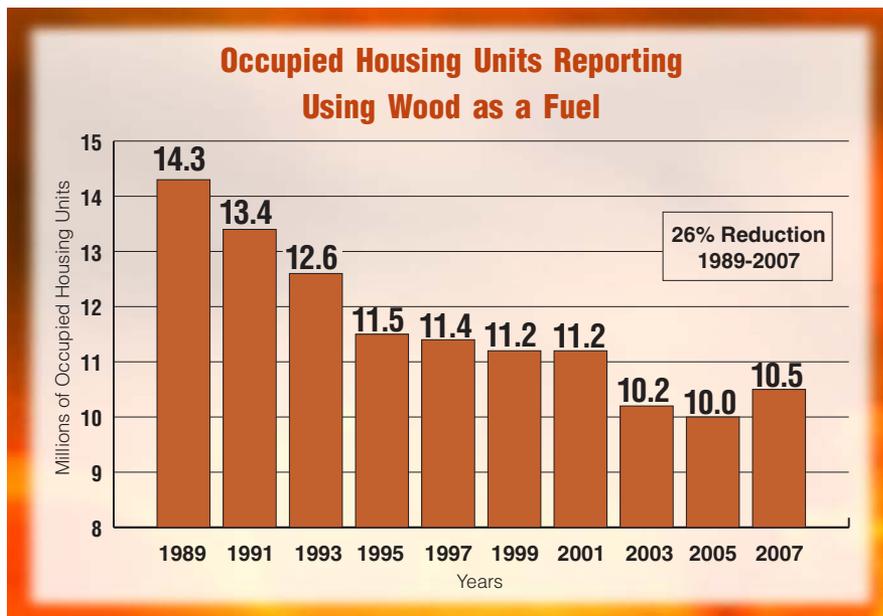
There is no question that wood-fired heaters made to pass the current NSPS and used in consumers' homes produce less air emissions than their pre-NSPS predecessors. The advent of the NSPS absolutely made progress in the protection of human health and the environment. As an example, according to a widely accepted U.S. EPA document (EPA-450/4-82-003), the particulate emission factor for certified (Phase 2) non-catalytic, wood-fired stoves averages 14.6 lb particles/ton dry fuel burned

as compared to the 30.6 lb/ton produced by old, pre-NSPS, uncertified models.

Similarly, the corresponding emission factor for carbon monoxide is reported to average 140.8 lb CO/ton dry fuel for new EPA-certified (Phase 2) non-catalytic, wood-fired stoves as compared to 230.8 lb/ton dry fuel for the old uncertified models. These reductions are 52 and 29 percent, respectively, which is not bad. Further, even without any significant data from their real-world in-home use, it is conventional wisdom that, on average, the newest of the EPA-certified, wood-fired stoves are significantly better in reducing air emissions than earlier certified models. It also should be remembered that new certified, wood-fired heaters are in the range of 10 to 30 percent more efficient than their older uncertified brethren, meaning that air emissions are reduced, if all else is equal, simply because less wood is burned.

There are some problems with the current NSPS, however. First, the current NSPS does not require old uncertified wood heaters to be replaced; it simply requires that only EPA-certified wood heaters can be sold and installed in the U.S. Consequently, it is estimated that about 70 percent of the wood heaters in use today are still the old uncertified models.

Second, only freestanding cordwood stoves, cordwood fireplace inserts and pellet stoves and inserts are regulated by the current NSPS. Fireplaces, wood-fired furnaces, hydronic heaters, masonry



(AHS data).

heaters, exempt wood heaters, wood-fired cookstoves, corn-burning stoves and coal-burning stoves are not included. In aggregate these units not covered by the current NSPS produce slightly more than a third of the total air emissions from residential solid-fuel burning.

Third, wood-fired heaters are not the pyramids of Giza. They last a long time but not millennia and their air emissions become greater with age. Of course, the longevity of anything from automobile tires to blue jeans depends on how hard they are used, but based on interviews with those with wood-fired heater testing experience, a reasonable estimate of the “typical” lifetime of a wood-fired heater before significant deterioration occurs is 12 years. Door gaskets and catalysts usually show the effects of aging much sooner. As with air emissions, it is conventional wisdom that the good-operating lifetime of wood-fired heaters and their components has improved from the earlier EPA-certified models, but also, as with real-world air emissions for the newest of models, there is little supporting data.

Normalizing emission reductions to account for the decline in the number of homes reporting using wood as a fuel since 1990, i.e., looking at the effect of the NSPS alone and ignoring the fact that fewer homes are now using wood, the reduction in particulate emissions from residential solid fuel combustion solely due to the NSPS regulations since 1990 is about 11 percent.

### At what cost?

At what cost was the 11 percent reduction achieved? Fiscally it was a serious challenge for many in the hearth industry. It was particularly hard on small manufacturers. According to a 1986 study by the American Enterprise Institute (AEI) and Brookings Institution Joint Center for Regulatory Studies conducted for the EPA, there were 200 to 300 wood heater manufacturers prior to the current NSPS. Approximately one-third of these produced fewer than 1,000 heaters per year. The cost to develop, test and tool-up for the production of new low-emitting wood-fired heater models is generally several hundreds of thousands of dollars each.

*Ed. Note: While memories do fail as the years pass, we feel the AEI-Brookings estimate of the number of wood stove manufacturers prior to the current NSPS is low. Our estimate, and*

*that of other manufacturers with whom we have spoken, is that there were at least 500 and perhaps many more.*

**“Those who cannot remember the past are condemned to repeat it.”**

— George Santayana

According to EPA’s official list of certified wood-fired stoves [www.epa.gov/oecaerth/resources/publications/monitoring/caa/woodstoves/certifiedwood.pdf](http://www.epa.gov/oecaerth/resources/publications/monitoring/caa/woodstoves/certifiedwood.pdf), the approximate total number of manufacturers that have ever certified a wood-fired heater since 1988 is 120. This supports a common anecdotal observation that suggests there are far fewer wood-fired heater manufacturers now,

particularly small manufacturers, even when accounting for new players that have more recently entered the market, than there were prior to the current NSPS. Most point to the increased costs associated with bringing new certifiable heaters to market as being responsible.

The retail prices of wood-fired heaters have indeed increased but clearly not enough to offset the development costs for new models. Again, reviewing the 1986 AEI-Brookings study, the costs of non-catalytic and catalytic heaters (adjusted to 2007 dollars) prior to the NSPS were \$1,189 and \$1,505, respectively. For comparison, a 2007 *Hearth & Home* survey showed the median best-selling retail price for wood-fired stoves and wood-fired inserts as \$1,500 and \$1,800. Consumers are paying more but not a lot more, suggesting hearth industry profit margins may be less than they were before the current NSPS.

## NSPS – SOME FACTS

**Designation:** Standards of Performance for New Stationary Sources; New Residential Wood Heaters, Vol. 53, No. 38, pp. 5860-5922, February 26, 1988, Federal Register.

**Length of Final Rule:** Approximately 60,000 words. (For comparison the U.S. Constitution is 4,440 words and a typical mystery novel is between 60,000 and 80,000 words).

**Number of wood heaters certified under program as of May 22, 2009:** 836 models.

**Total approximate cost to manufacturers to develop, bring to production, and certify 836 new models:** Estimated at more than \$400 million.

**Number of wood heater manufacturers prior to NSPS:** 200 to 300; 1/3 produced fewer than 1,000 heaters per year; 1/3 produced 1,000 to 5,000 heaters per year; 1/3 produced more than 50,000 heaters per year.

**The two-thirds of manufacturers making less than 5,000 heaters per year held only 15 percent of the market share at the time of the NSPS promulgation.**

**Total number of wood heater manufacturers that have ever certified a wood heater as of May 22, 2009:** 120 (note this is an approximate number due to mergers, acquisition of product lines, and subsidiary status of some companies).

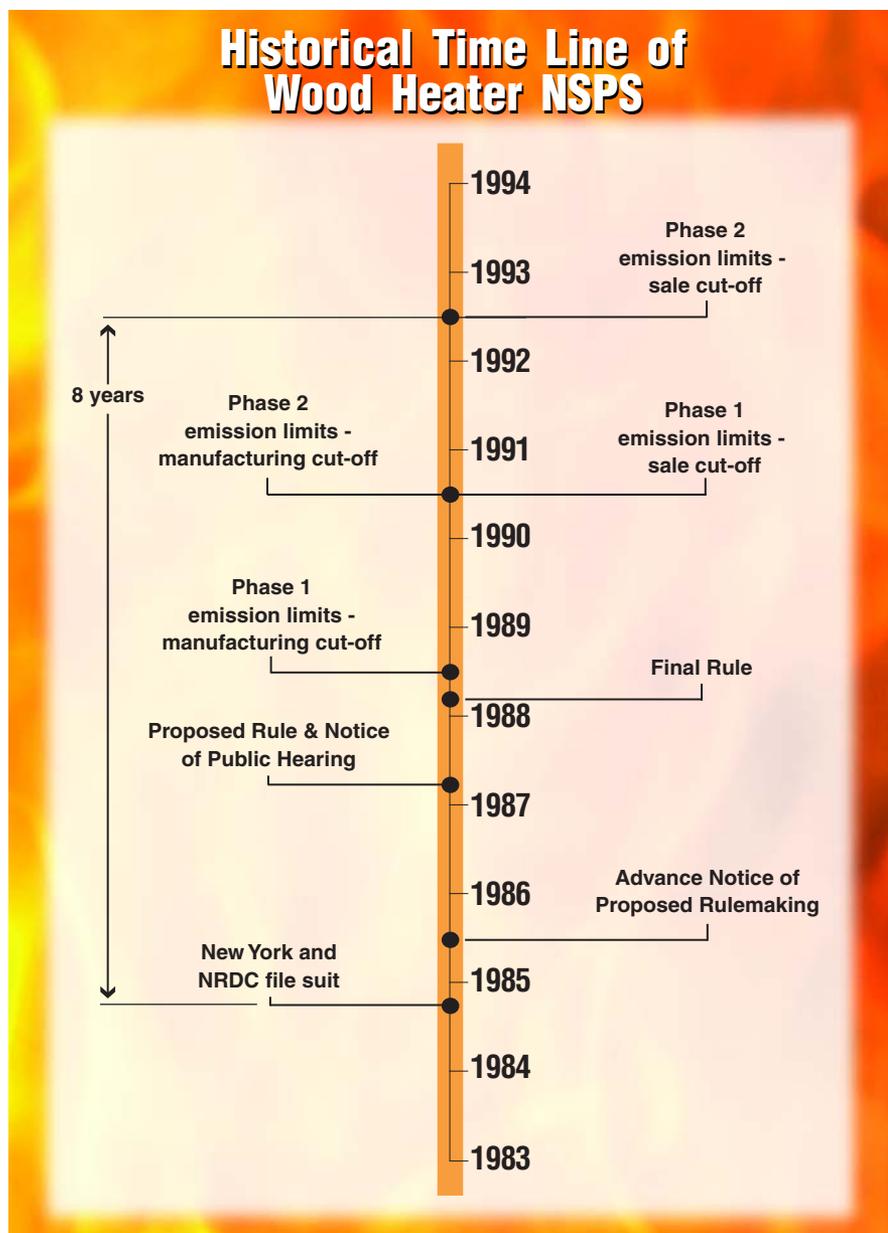
**Reported average pre-NSPS retail price of catalytic and non-catalytic heaters:** \$901 and \$712 (1986 dollars), respectively. Price adjusted to 2007 dollars, \$1,505 and \$1,189.

**Median 2007 best-selling retail price, wood stove:** \$1,500 and wood insert: \$1,800.

**Reduction in the number of households reporting using wood as a space heating fuel since start of NSPS:** 26%.

## What have we learned?

- We have learned that technology can reduce air emissions from solid-fuel burning heaters.
- We have learned that NSPS regulations have to be stricter and more encompassing to make a big difference in solid-fuel heater impacts to ambient air.
- We have learned that NSPS regulations have the potential for dire economic consequences on the hearth industry and especially on small manufacturers.
- We have learned that strong advocacy for favorable industry positions can backfire if the bar is set too low and credibility is lost.
- We have learned that unless a regulation is technology-forcing yet still reasonable no one wins.
- We have learned that not only did science and engineering play a role in the decisions for the current NSPS but expediency did as well, not with generally good outcomes.
- We have learned that there is room for a lot of improvement in the testing protocols supporting the standards.
- We have learned that consumers will have to pay more and the hearth industry's profits will decrease with more stringent regulations.
- We have learned that air emissions from residential solid-fuel-fired heaters do pose a real potential threat to public health and the environment.
- We have learned that regulatory timelines invariably take longer than planned, particularly if litigation is involved.
- And finally, we have learned that there is a real opportunity for industry representatives and the regulators to work together to come up with reasonable compromises for the tough issues faced by the industry.



The bottom line that should not be forgotten is that the climate of the United States, excluding Hawaii and the southernmost tip of Florida, can best be described as ranging from temperate to arctic – space heating is needed in almost every home and all space-heating options, including solid fuel combustion, have environmental pros and cons.

### Where do we go from here?

It is early in the NSPS development game and still unclear what biomass-fired (and/or coal-fired) appliances EPA will decide to regulate and how stringent the EPA intends to be, i.e., what the details are of what EPA wants to do. However, prudence would dictate

staying informed and getting involved if for nothing more than to protect one's own self-interests. Simply put and without embellishment – substantial changes in products and business practices may become necessary; it is not too early to begin preparations.

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# The Second Time Around

## Key Players, Experts and Interested Parties

*To get a reality check on the expectations and motivations of air quality regulators and the impact that a new NSPS might have on the hearth industry, we talked with key players and recognized experts within the hearth community. We spoke with Gil Wood who is the EPA staff lead for the residential wood*

*heater NSPS review/revision; Bob Lebens, technical coordinator with the Western States Air Resources Council; Richard "Jiggs" Blackburn, president of Rising Stone; and Ben Myren who is president of Myren Consulting. We also spoke with leading wood heater manufacturers.*



**Gil Wood**  
EPA Staff Lead

Residential Wood Heater NSPS  
Review/Revision Office of  
Air Quality Planning and Standards  
U.S. Environmental Protection Agency

### **Why is the EPA considering revising the NSPS for Residential Wood Heaters?**

"It's due for review. The Clean Air Act requires EPA to review this type of standard every eight years and make any appropriate revisions. We've been requested to review the wood stove standards by several state and local governments and tribes, in addition to organizations such as the National Association of Clean Air Agencies (NACAA), the Northeast States for Coordinated Air Use Management (NESCAUM) and the

Western States Air Resources Council (WESTAR).

"These agencies and organizations, along with HPBA's Hydronic Heater Caucus, also have asked us to develop federal regulations for hydronic heaters (also called outdoor wood boilers or water stoves)."

### **Does the EPA have a projected timeline for the new regulation?**

"The projected timeline is for a draft review document by Sept. 30, 2009 (it was completed Oct. 30, 2009), a proposal of revisions by Sept. 30, 2010, and a promulgation of revisions by Sept. 30, 2011."

### **What will be the major differences between a new NSPS and the existing one?**

"Our goal is to develop a rule that will complement EPA's efforts through the Great American Wood Stove Change-out Campaign to replace old wood stoves with today's cleaner technology. Technology has changed since the existing standard was issued in 1988. Best demonstrated technology (BDT) for wood stoves has improved significantly in the last two decades. Hydronic heater technology has improved more recently – as a result of EPA's two-year-old voluntary partnership program for those appliances.

"Because technology is better today, it's reasonable to anticipate that the proposed allowable emission limits will be

lower. In addition, we've been asked to examine the options to regulate all wood-burning residential appliances. What's covered by the current regulation, what's not – and why – has been the source of a lot of confusion for a number of years. That's something we'll be looking at."

### **How encompassing do you think the new standard will be?**

"At this time, the review is closely examining options to include all residential wood-burning appliances. We have been asked to consider developing regulations for other solid biomass and coal appliances, because these appliances are growing in popularity again.

"So we'll be looking at a number of different residential solid fuel-burning appliances besides the cordwood and pellet freestanding stoves and inserts now covered by the NSPS. These might include coal-fired units, other biomass-burning (corn) units, and different wood-burning devices (masonry heaters, hydronic heaters, currently exempt stoves, furnaces, cookstoves and fireplaces)."

### **Do you think the affected facility designation would have to be changed from the current "wood heaters" to something else more accurately descriptive?**

"Not necessarily. It depends on how encompassing the NSPS is after our review. We could also consider 'listing' a new source category under the Clean Air Act."

**Will efficiency and/or heat output be taken into consideration in the new standard?**

“Yes, but it’s premature to say how they will be factored into NSPS revisions. While we’re reviewing the NSPS, we’re also working on a new outreach campaign – BurnWise – to help consumers navigate what can be a confusing array of information intended to help them make wise choices on how to heat their homes. We want to help ensure that homeowners are getting their money’s worth – and that they’re selecting the cleanest appliances to heat their homes.”

**There has been considerable discussion on technical issues associated with testing protocols. Without going into the tedious and often contentious details, what do you see as the big issues associated with testing protocols?**

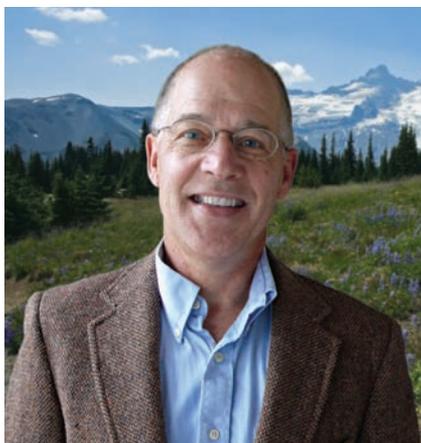
“One issue is ensuring that we have appliances that are based on today’s best demonstrated technology and that operate well in homes. Another is finding common ground to ensure the appliances are properly tested and avoid problems that may undermine performance in homes.”

**When all is said and done, what would you like the outcome to be with a revised NSPS?**

“EPA’s goal is a regulation that will ensure that today’s best demonstrated technology is used in all new residential wood-burning appliances. That way, consumers can be confident when buying a new EPA-certified appliance that it is cleaner than older wood-burning appliances. Emissions will be reduced when consumers use today’s cleaner appliances and follow EPA’s Burn Wise practices.”

**What is the Burn Wise campaign?**

“Burn Wise is our campaign to help consumers get the most out of their wood stove or hydronic heater or other wood heater – while limiting the pollution from those appliances. The appliance a consumer selects, the appliance and chimney maintenance habits, splitting and wood seasoning practices, and the way the fire is built all make a difference in how much wood is used – and how much pollution comes from the wood-burning appliance. So we’re going to be reaching out to consumers with information that will help them be Greener, while also saving money.”



**Bob Lebens**  
Technical Coordinator

Western States Air Resources (WESTAR) Council

WESTAR is an air quality organization with membership made up of 15 western state air quality regulatory agencies and five federal land management partners. Its purpose is to serve as a forum for regional air quality issues and share resources for the common benefit of member states. It is funded primarily by the U.S. EPA.

**It is our understanding that you have had a long history with wood heater regulations going back even before the first NSPS.**

“Yes, I was employed with the Oregon DEQ from 1984 to 1987 and served in a staff position and manager with responsibility for implementation of the Oregon wood stove certification program. Later, I was employed with the U.S. EPA (Washington, DC) from 1987 to 1992 and served in a staff position and manager with responsibility for the development and implementation of the Federal Wood Heater NSPS.”

**Why did WESTAR along with NESCAUM jointly urge the U.S. EPA to update the NSPS for wood-burning devices, specifically with a pivotal April 29, 2008 letter?**

“Residential wood burning is a significant source of small particle pollution, much of which is toxic. In some instances, residential wood burning is the principle source of air pollution and the reason communities exceed the federal health-based air pollution standards.

“A tighter standard for currently-

regulated appliances will reduce air pollution as newer, cleaner-burning products replace dirtier-burning, older appliances. Including a broader range of residential wood-burning devices in the NSPS will also reduce the rate of growth of emissions from new, currently unregulated residential wood-burning devices.”

**What does WESTAR hope that a new updated NSPS will accomplish?**

“WESTAR hopes that the revision to the NSPS will result in a tighter standard so that only the cleanest-burning appliances are available to the consumer. We also hope that other cleaner-burning, residential wood-burning devices, including hydronic heaters and fireplaces, will be regulated in an updated NSPS.”



**Richard Blackburn**  
President

Rising Stone

Richard S. “Jiggs” Blackburn has had 29 years experience in the R & D, production, testing and business development of wood combustion systems. Prior to becoming an independent consultant he worked at Jotul USA, Vermont Castings, Shelton Research, OMNI Environmental Services and CFM Corporation. He has participated in the development of 14 NSPS certified wood heaters including three out of the five lowest emissions wood stoves ever produced by the hearth industry.

**What is a good estimate of the time for taking a new wood heater from conception, through NSPS and safety testing procedures, and finally readied for production?**

“For non-catalytic heaters it is 12 to 14 months. For catalytic heaters it is 10 to 12 months. It needs to be emphasized that ‘time is indeed money’ and anything that causes delays, such as regulatory bottlenecks, in getting a new heater to market is costly to the industry.”

**With the caveat always associated with the term “typical,” what is the typical cost, again for taking a new wood heater from conception, through NSPS and safety testing procedures, and finally to market?**

“For steel wood stoves, both catalytic and non-catalytic, the total cost from start to finish is typically between \$645,000 and \$750,000. For non-catalytic, cast-iron, enameled wood stoves it is slightly more than \$1 million. For a comparable painted, non-catalytic, cast-iron model it is about 18 percent less or \$832,000. It should be noted that, if a number of similar models are made, there might be as much as a 25 percent reduction in this cost for each model.”

**Slightly more than \$1 million for an enameled, cast-iron wood stove is surprising. Can you break it down a little?**

In response to this question, Blackburn broke down the cost into 10 steps for a likely scenario. He notes that combustion engineering, mechanical engineering, other inside company, outside company, tooling and testing costs all contribute to the overall expense.

**Ben Myren**  
President

Myren Consulting

Ben Myren has been involved in wood heater testing and research since 1984. In the last 25 years he estimates he has personally been involved in between 8,000 and 9,000 R&D and certification test runs on about 250 wood heater models.

**What is the most important thing to take into consideration when revising the testing protocols for the new NSPS?**



“One of the stated goals of state regulators pushing for the NSPS review is to make certification test results a better predictor of actual field performance. The ambient air quality data from Libby, Montana, indicated that the reduction in the day to day ambient PM<sub>2.5</sub> concentrations, while very substantial, was not as great as expected.

“A possible explanation for some of the difference between the expected and actual results is the difference between laboratory test results and actual field performance. In short, we need to determine if there is anything in either EPA Method 28 or Method 5G that may be a partial cause of this difference and, if so, how do we change the methods to better optimize the field performance of EPA-certified wood heaters. We can – and must – do better just to keep wood as a viable option in much of the country.”

**Specifically, what key changes do you envision are most important for revised test protocols?**

“Laboratory draft conditions as compared to real world, in-home draft; the surface-area-to-volume ratio of real cordwood fuel as compared to test cribs; and the size and configuration of laboratory fuel loads as compared to those typically used in the home all need to be evaluated.”

**Are there other important factors?**

“Certainly there are other factors, such as fuel moisture and consumer operation of the appliance, that are known to affect field emissions. And there are ways, for example, education programs, to help ensure that these ‘other factors’ more closely compare to what takes place during certification testing.”

Typical Cost of a Wood Heater from Concept to Completion	
10 Steps for a Likely Scenario	
1. Product marketing & visual specifications . . . . .	\$20,500
2. Visual design and combustion concepts . . . . .	26,800
3. Primary development of first generation unit . . . . .	252,694
4. Primary development of second generation unit . . . . .	341,694
5. Final development of prototype . . . . .	168,600
6. NSPS and safety testing . . . . .	40,000
7. Completion of final design . . . . .	32,900
8. Cast iron, refractory, vendor tooling . . . . .	118,680
9. Enameling trials . . . . .	5,060
10. Produce fully routed and costed bill of materials . . . . .	7,640
<b>TOTAL . . . . .</b>	<b>\$1,014,568</b>



## Roger Purinton

### Product Development

Jøtul North America

"In the '80s I was working in the lab at Vermont Castings and pretty much saw the whole thing from beginning to end. I think there was a suspicion hanging overhead back then, but relationships have developed and understanding evolved between the EPA and hearth manufacturers. The hearth industry values doing what we can for the environment, and that wasn't necessarily the case the first time around.

"Back then there were many unknowns. How much time and how much money would be required? If you had an in-house laboratory you could do all the pre-testing there and then go to the certification lab and breeze through. We had our own lab at VC, but we were still testing 24-7. I was actually working from 6pm to 6am.

"There was a large impact. Some folks were struggling to cover the bills they incurred. There were also demands on quality control, fitting all those programs together to make sure they were effective. It created more work. It did. But in the long run, it was a good thing. But it was a tough haul.

"There was definitely a major consolidation in the industry. The ones that were strong and wanted to play the game came out okay. This time around we could lose some manufacturers, but nowhere near what happened the first time.

"Right now, everybody is trying to go Green and hoping to be in the forefront. We are still facing issues here and up in Canada. They are still trying to ban our products, so the cleaner we can

make them, the better off we are going to be. This time around there seems to be a lot more willingness to work at a mutually satisfactory solution to the ultimate goal we want to reach."

## Kurt Rumens

President

## Alan Atemboski

Director of Research & Development

Travis Industries

(Rumens) "Back when we learned about the coming of the first NSPS, we were really green. Alan (Atemboski) was there right at the beginning. We hired Skip Barnett (combustion engineer), Paul Tieg (test lab) and Jay Shelton (combustion engineer). Shelton was convinced it was a catalytic-only standard. Alan was the one that hit on it. He said, 'What if we just increase the turbulence and the temperature in this area, and don't let it go out so fast.'

"We ended up getting patents on secondary air tubes but didn't have the money to protect them, so that technology is throughout the industry today. We received certificate number 3, the first non-catalytic stove ever to comply with all burn rates.

"We were not afraid of the new regulations; we were not angry. We approached it with a big budget and knew we were going to do it. Once we figured it out, it took us from a regional company to a national company in the course of two years. It was an exceptional thing.

"Meanwhile, the NSPS collapsed a lot of manufacturers. There were over 400 manufacturers back then."

(Atemboski) "It dropped down as low as 50, and has come up a bunch since then."

(Rumens) "The overall industry sales also diminished. There was no longer a threat of an oil embargo, so consumer demand changed dramatically.

"We're approaching the coming NSPS with the same positive attitude. We don't mind building a cleaner-burning stove, but we need to know what the goal is. How do we test for it? And that takes time. And the end result has to remain user-friendly. You have to have a stove that is easy to

light, with glass that stays clean."

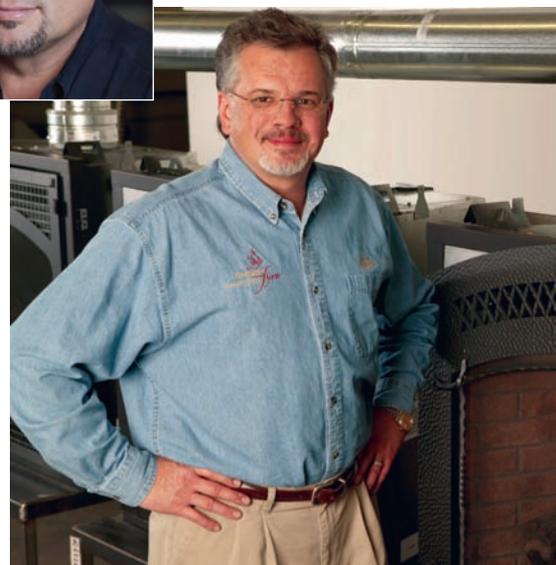
(Atemboski) "We're not sitting around waiting. We're trying to anticipate what they want and we've got projects going on right now that look at ways to further reduce emissions in our stoves. I'm convinced, from my conversations with the EPA, that they understand we have to build a stove that consumers can operate easily in their home."

(Rumens) "I do think that the pressure of a tough economy coupled with the requirement of more research will have a compound effect. It will be tough going for some companies."

(Atemboski) "If you look at the EPA's certified stove list, particularly at all the companies that



(L. to R.) Kurt Rumens,  
Alan Atemboski



don't comply with Washington State's 4.5 or 3.5 requirements, those most likely will be the companies that go away because they have not invested time or energy in figuring out some of these things. They are going to have to go from 7.5 to whatever the new standard is.

"I don't agree with what the HPBA is doing; they're trying to come up with a separate standard for builder boxes and the EPA is baulking. Their position is, 'No, we're going to regulate everything the same way.' You can't have one standard for this type of wood-burning product and another standard for this other type of wood-burning product."



## Craig Shankster

President

Morsø US

“The first NSPS dramatically affected Morsø. It occurred during a period when we were not particularly profitable in the industry here (Morsø is a Danish company), and we made a commercial judgment not to retool for the American market. We backed out and, in my opinion, made a huge mistake because we then lost 16 years of market momentum.

“This time around, I am quietly confident we won’t see too many upsets in the way we currently test the product. I think it will be just a matter of cleaning up some of the gray areas with the test methods. We test for many different markets, so I don’t think there will be many surprises.

“What will it do to the industry? I think it is going to sort out the gray areas again, the hydronic heaters, for example, and the fireplaces. Those are people on the outside of the loop and I think, rightly, they should be in it. Wood smoke comes from many things; I would even like to bring in barbecues if I could.

“It would be nice if EPA would look into other polluting things such as cars and barbecues. I’m sure you’ve seen the plumes of smoke coming from steak-houses over the weekend.

“We don’t call ourselves Morsø Wood-burning Stoves anymore. We have re-labeled ourselves Morsø High Efficiency Wood Stoves. Stay away from the wood-burning bit. The industry could do a hell of a lot of good with everybody adopting that type of thinking.

“The new NSPS? I welcome it, to be honest. I think it’s needed. It’s also needed beyond our industry. I would like to see some stiffer regulations for change-outs. I think there should be a compulsory change-out.”

## Brad Determan

President

Hearth & Home Technologies

“I came into the industry in ’95 through the white goods business, and we had similar issues in refrigeration, for example, with the Department of Energy – being required to make appliances more energy efficient. So I’m not unfamiliar with this process.

“By its very nature the process ends up becoming political and people start competitive posturing, but at the end of the day it works. People generally don’t like being told what to do, especially by government types, but the reality is that most of us need somebody

good venture for them to be in the stove business? That’s possible, sure.

“There’s no question that the first NSPS was good for the industry. The recent proclamation on Libby (meeting the new 24-hour fine particulate – PM<sub>2.5</sub> – federal standard) is a great example. How can you be in an industry for any length of time and not agree with things that are obviously good for that industry?

*Ed Note: We asked about the fate of the open wood-burning builder box.*

“To some extent that depends on where they land on the regulation and how innovative we can get. It’s a very difficult technology to control. Is there a chance that one of us can innovate sufficiently to keep those very aggressive opening price points on that product? Maybe. But I’m not sure that’s what homeowners want anymore anyway.

“Homeowners will continue to want a hearth product in the home. What’s fun in this business is that we’re turning good hearth products into something



to come in once in a while and say, ‘Hey, you can do better.’ So I don’t have the kind of adversary response to this process that I see some people have.

“We’re fortunate in that hearth products don’t have the capital barriers of an automobile or many other products. It’s more intellectual property, time, thought and a little bit of tooling. But will these new regulations cause some people to decide that it is no longer a

that they haven’t been – some of the contemporary looks, the artwork. I’m not sure that the (builder box) wouldn’t die a natural death in the marketplace anyway. If it ends up getting double-pressured out of the system, that would be okay.

“Homeowners are going to want fireplaces long after you and I are gone, and we have to figure out what they want them to do and look like.”