

COMMENTS on

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR MAJOR SOURCES: INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS, *75 Federal Register 32006* (June 4, 2010) (EPA Docket Number OAR–2002–0058)

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STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES AND EMISSION GUIDELINES FOR EXISTING SOURCES: COMMERCIAL AND INDUSTRIAL SOLID WASTE INCINERATION UNITS, *75 Federal Register 31938* (June 4, 2010) (EPA Docket Number OAR–2003–0119)

By the National Association of Manufacturers

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**COMMENTS ON EPA'S PROPOSED MACT RULES FOR
BOILERS, PROCESS HEATERS AND CERTAIN SOLID WASTE INCINERATORS**

INTRODUCTION

The National Association of Manufacturers (Manufacturers) welcomes the opportunity to comment on the Environmental Protection Agency's (EPA's) three proposed rules¹ to address emissions from boilers, process heaters and certain solid waste incinerators.² Manufacturers are the largest industrial trade association in the U.S., representing over 11,000 small, medium and large manufacturers in all 50 states. Manufacturers are the leading voice in Washington, DC for the manufacturing economy, which provides millions of high wage jobs in the U.S. and generates more than \$1.6 trillion in GDP. In addition, eighty percent of our members are small businesses, which serve as the engine for job growth. Manufacturers' mission is to enhance the competitiveness of manufacturers and improve American living standards by shaping a legislative and regulatory environment conducive to U.S. economic growth. While we support environmental regulations designed to provide real net benefits to the environment and public health, we consistently oppose regulations that create adverse economic impacts and that are not in compliance with the underlying law.

As context for these comments, it is important to consider that manufacturers are attempting to fully recover from the steepest economic downturn since the 1930s and bring back the 2.2 million high-wage jobs lost in recent years. At the same time, our member companies are confronting an avalanche of additional rules and regulations from EPA including new SO₂ and NO_x National Ambient Air Quality Standards (NAAQS) the reconsideration of the 2008 "Ozone NAAQS," the reconsideration of the 2007 "PM NAAQS," the proposal to regulate coal ash, and the imposition of first-time federal regulations on greenhouse gas emissions. Manufacturers strongly urge federal policy makers to create conditions that will lead to economic expansion and not stifle the industrial and manufacturing vitality necessary to create jobs and technologies that will continue to improve the nation's air quality. Imposing unduly strict mandates on the manufacturing sector will not accomplish any of these objectives.

The EPA's proposal to impose more emission standards on industrial boilers will cut across all sectors of our membership, including the chemical, auto manufacturing, metalworking, petroleum refining, steel, cement, and forest and paper sectors. New and overly stringent standards for industrial boilers will have an immediate impact on our members' bottom line without demonstrated environmental benefits. Compliance costs associated with these

¹ National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers; and Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units. Since Manufacturers' concerns associated with these three rules overlap on key topics and because EPA's justifications for aspects of three rules are so intertwined, Manufacturers are submitting one set of comments to address all three proposed rules. Where there are overlapping issues, these comments are directed to all three rules regardless of whether the citations are only to the draft of one of the rules.

² Manufacturers file these comments in addition to comments filed on August 3, 2010, regarding EPA's proposed rule under RCRA that would regulate the identification of non-hazardous secondary materials that are solid wastes when used as fuels or ingredients in combustion units (Identification of Non-Hazardous Secondary Materials That Are Solid Waste; Proposed Rule, 75 Fed. Reg. 31844 (June 4, 2010)).

harsh and inflexible proposed rules will cost U.S. manufacturing jobs and hurt global competitiveness, just as the economic recovery attempts to gain more traction. Further, as described below, the severity of the proposed standards may lead to the perverse effect of disincentivizing projects that otherwise would realize environmental improvements.

While Manufacturers support certain aspects of the proposed rules described below, we remain fundamentally concerned that EPA has proposed standards that are not actually “achievable” or “achieved in practice” by existing or new “sources,” as expressly required by the Clean Air Act. This unfortunate and unworkable result is driven by a series of flawed decisions embedded in the proposed rule. For example, by relying separately on emission data for each hazardous air pollutant, EPA has proposed standards based on hypothetical “best performing” units that have not been achieved by any actual sources, rather than using data that are representative of what is actually achieved by real sources. In addition, EPA’s reliance on incomplete and defective data has resulted in flawed standards that are biased towards overly-restrictive limits. In order to avoid these results and to conform the rules to the requirements of the Clean Air Act, Manufacturers request that EPA make significant changes to the proposed rule in light of the following points.

While Manufacturers support EPA’s decision to establish work practice standards in lieu of emission limits for certain gas-fired boilers, EPA should provide for work practice standards on all gas-fired and biomass units with this rule. EPA has properly exercised its authority by proposing to rely on work practice standards in lieu of emission limits for certain gas-fired boilers. 75 Fed. Reg. 32025. By doing so, EPA is taking one important step toward making sure that these rules do not unduly harm certain segments of the nation’s critical manufacturing base. As EPA recognizes, the capital cost of emissions controls for the numerous existing gas-fired boilers would be extraordinarily high. *Id.* Further, EPA correctly concluded that imposing emission limitations on gas-fired boilers would create a disincentive for switching to gas from oil, coal or biomass as a control technique. *Id.* In fact, it could create an incentive for facilities to switch away from gas to other fuels. Both outcomes should be avoided.

EPA should, however, take the necessary next step and extend the work practice approach to all gas-fired units. Despite the exceedingly strict emissions limits that are proposed, EPA has not identified a demonstrated path to compliance for the remaining gas-fired units for which EPA has not proposed to make work practices available. Rather than imposing undue and unrealistic costs and standards on these remaining gas-fired boilers, EPA should allow work practices rather than require emissions limitations.

EPA should also establish annual tune-up work practice as the MACT standard for biomass boilers. For example, in the forest products industry alone, the estimated cost of complying with the proposed HAP emissions limitations for biomass boilers is \$3.3 billion. This is an extraordinary cost that, in the context of the forest products industry, equals or exceeds the magnitude of the economic burden that EPA predicts for the Gas 1 subcategory. Similarly severe economic impacts are expected in other industry sectors where biomass boilers are widely use, such as the furniture, sugar, and agricultural products industries. Thus, there is strong economic justification for prescribing work practice standards for biomass boilers in lieu of numeric emissions limitations.

In addition, EPA has overreached in crafting the proposed work practices and “beyond the floor” requirements. The energy assessment and management work practice requirements are too broad, too intrusive, and exceed the scope of EPA’s authority for CAA MACT rules. EPA should more narrowly tailor these requirements.

EPA's HAP by HAP approach to setting the MACT floor violates the Clean Air Act.

EPA has proposed MACT standards for industrial boilers and process heaters that are based on individual pollutant-by-pollutant – rather than source-by-source – analyses in patent violation of the Clean Air Act. EPA has set limits for the suite of HAPs that reflect the “best performing source” for each individual HAP. Put differently, EPA has “cherry picked” the best data in setting each HAP standard, without regard for the sources from which the data come. This results in a combined set of standards for purely hypothetical boilers that may never have actually been achieved by any single, real world source. Creating hypothetical “best performing” units that demand performance not achieved by any actual source in the category is arbitrary and capricious and violates the language of § 112, which focuses on actual “sources.” See CAA § 112(d)(1), (2), and (3). Rather than focusing on individual HAPs, the Clean Air Act unambiguously directs EPA to set standards based on the overall performance of “sources.”

Further, EPA has calculated its proposed MACT floors solely on the basis of emission data. EPA utterly ignored the plain mandate of the Clean Air Act by entirely neglecting to determine whether there was emission control equipment in use in each subcategory that could actually achieve those inordinately strict emission limits, a critical and necessary analysis required by the Clean Air Act.

EPA's focus on individual HAPs has resulted in a failure to recognize the critical interplay between emissions controls and emissions of other pollutants. For example, Manufacturers are concerned that the controls necessary to meet the stringent emissions limitations for CO will result in increased energy usage, with the concomitant increase in emissions of NOx and other pollutants. Further, EPA failed to account for this interrelationship in its economic analysis.

In light of extensive data sourcing and quality problems, EPA's standards are arbitrary and capricious. We believe the data that EPA gathered to support these rules reflects bias, is incomplete, and is fundamentally flawed. EPA's data collection efforts to support these rules were biased toward so-called “top performing facilities.” EPA directed its information requests to units that it had reason to believe were the better performing units in each subcategory. This tainted sample has resulted in proposed standards that are inordinately stringent, not representative of the overall subcategories to which they apply, and not in accord with the legal standards.

In addition, despite the decade and a half long process that lead to the proposed rules, the Agency based the standards on a relatively minute pool of relevant data. This is best demonstrated by the fact that EPA is faced with the question of what to do about subcategories of over 30 sources where data is so limited that the top 12% is represented by only one or two sources. 75 Fed. Reg. 32022. Given that the Clean Air Act requires EPA consider at least five sources in such a situation, the ultimate solution to this concern would have been to have collected more data in the first place.

Finally, EPA's analysis failed to properly address the variability of the data, as well as emissions associated with startup, shutdown and malfunction. Thus, EPA's proposed limits do not appropriately address the variability in emissions of various HAPs. In addition, EPA's proposed limits are unduly impacted by issues associated with the limits of detection. Fundamentally, numerical limits should be based on quantifiable and reproducible test results consistent with reliable source test methods that have well-established performance. Limits should not be based on tests and methods that raise issues of significant measurement and other uncertainties.

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COMMENTS

I. Manufacturers support EPA's decision to require work practice standards in lieu of emission limits for certain gas-fired boilers: EPA should extend this decision to all gas boilers subject to MACT

Manufacturers strongly support EPA's proposal to establish annual tune-ups as the MACT standard for existing and new boilers and heaters that combust natural gas or refinery gas (*i.e.*, the so-called "Gas 1" subcategory). See 75 Fed. Reg. at 32025, 32029. In adopting annual tune-ups as MACT, EPA should recognize expressly that they constitute the floor for existing and new Gas 1 boilers and heaters and that no beyond-the-floor requirement would be appropriate.

A. *EPA correctly concluded that the exorbitant costs of control equipment and the perverse results that numeric emission limits would create justify a work practice MACT standard*

EPA offers two proper and correct justifications for its selection of tune-ups as the MACT standard for the Gas 1 subcategory. Manufacturers agree with EPA's conclusion that the following two reasons justify the proposed work practice MACT standard:

- First, EPA estimated that the cost of compliance with emission limits would be exorbitant – \$14 billion – because compliance would require the widespread installation of a system of combined fabric filter and wet scrubber technology. 75 Fed. Reg. 32025. Indeed, the database shows that no Gas 1 unit anywhere employs such technology.
- Second, the exorbitant costs would create perverse results which could create more HAP emissions than would otherwise occur under the work practice standards or even under the status quo. For example, a company with a solid fuel-fired boiler might be deterred from switching to a natural gas-fired boiler; and a company with a natural gas-fired boiler might be encouraged to switch to a solid fuel-fired boiler in order to reduce compliance costs associated with numeric limits for Gas 1 boilers.

In addition, as discussed below, there are other compelling reasons why EPA's conclusion that annual tune-ups should be established as the MACT standard for existing and new boilers in the Gas 1 subcategory.

B. *Numeric limits for Gas 1 boilers would violate the Clean Air Act as there is no available emission control technology to meet the potential numeric limits*

As discussed in more detail in Section II.B, in establishing a numeric MACT standard, EPA must be able to show that there is an emissions control device that is technologically available to all of the units in the subcategory and sufficient generally for them to achieve the identified emissions rate. If EPA cannot identify such a control measure, it may not translate the emissions rate into a standard, as that would then be interfering with fundamental choices about basic design of production equipment, which is beyond EPA's authority under the Clean Air Act.

For Gas 1 boilers, tune-ups are the only identifiable technologically feasible form of control, and hence constitute the *de facto* “floor.” There are no control measures in the Gas 1 database that would allow the units in the subcategory to reach the emissions level of the lowest-emitter(s). To the contrary, the database shows that the primary explanation for the differences in emissions rates is the differentials in basic design characteristics of the Gas 1 units. In these circumstances, as discussed *infra* (Section II.B), EPA is not authorized to set the MACT standard in line with the emissions of the lowest emitters, as it cannot point to an in-use and effective emissions control technology across the subcategory. Thus, EPA must turn to section 112(d)(2), which calls for a search through the database for any effective form of control in significant actual usage. The only such control measure that can be discerned in the database is tune-ups. Thus, tune-ups constitute the *de facto* “floor” for existing and new units.³

C. EPA has clear authority to set a work practice standard for Gas 1 units

Further, EPA has ample legal authority to set the standard for Gas 1 units in terms of a work practice. First, section 112(d)(1) authorizes – if not requires – EPA to set “emission standards” for each category or subcategory, and section 302(k) defines “emission standard” to include work practice standards. Thus, if EPA determines that the best performing sources achieved their emissions performance through work practices rather than control equipment, those work practices should be identified as the “floor.”

Second, section 112(h)(2)(b) independently authorizes EPA to use a work practice standard where, as here, the application of a system for measuring the effect of the control measure for enforcement purposes is not practicable. For gaseous fuel boilers, it is not practicable to measure emissions at the levels of EPA’s proposed limits, as stack emissions of, for example, 1 ppm CO may be difficult to differentiate from environmental background levels.

EPA has independent authority to promulgate work practices as emission standards under CAA §302(k) as long as the work practices provide a continuous limit on emissions or are part of a set of regulations that provide a continuous limit on emissions. As required by CAA § 112(d), EPA must promulgate “emission standards” for the control of hazardous air pollutants at major sources. Originally, these “emission standards” were found to be limited to only numeric emission limits. See, e.g., *Adamo Wrecking Co. v. U.S.*, 434 U.S. 275 (1978). However, in the 1990 Amendments, Congress the expanded the definition of “emission standards” in §302(k) to expressly include work practices:

The terms “emission limitation” and “emission standard” mean a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, **and any design, equipment, work practice or operational standard promulgated under this chapter.**

(emphasis added).

³ Manufacturers agree with EPA’s conclusion that the potential “beyond the floor” systems combining fabric filter and wet scrubber technology are not “achievable” because of the exorbitant cost and perverse incentives which EPA outlined in its proposal. Further, establishment of a single numerical standard is not technically feasible. The design characteristics of the units, and hence the emissions-reduction potentials of annual tune-ups, vary widely. Consequently, there is no single emission rate or even percentage of emission reduction that could be translated into a numerical limit.

As a result, the plain language of the Clean Air Act now authorizes the promulgation of work practices: (1) as direct emission standards under §302(k), and (2) in lieu of emission standards under CAA §112(h). While both of these sections authorize the implementation of “work practices,” they are distinct provisions that serve different roles. As noted in the legislative history of the 1977 amendments to the Clean Air Act, the key to an emission standard under CAA § 302(k) is that it applies continuously:

By defining the terms “emission limitation,” “emission standard,” and “standard of performance,” the committee has made clear that constant or continuous means of reducing emissions must be used to meet these requirements. By the same token, intermittent or supplemental controls or other temporary, periodic, or limited systems of control would not be permitted as a final means of compliance.

H.R. Rep. 95-294, at 92 (1977), as reprinted in 1977 U.S.C.C.A.N. 1077, 1170. As interpreted by the D.C. Circuit in *Sierra Club v. EPA*, 551 F.3d 1019, 1027 (D.C. Cir. 2008), “[w]hen sections 112 and 302(k) are read together . . . Congress has required that there must be continuous section 112-compliant standards.” CAA § 112(h), on the other hand, includes no requirement for continuous regulation, allowing that “a standard may be relaxed ‘if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard for control of a [HAP].’” *Id.* at 1028 (quoting 42 U.S.C. § 7412(h)(1)).

EPA can therefore comply with CAA § 112(d) by either: (1) promulgating CAA § 112(d) emission standards that comply with the CAA requirement that “some section 112 standard apply continuously,” under which Congress “did not authorize the Administrator to relax emission standards on a temporal basis,” or (2) find that it is not feasible to prescribe or enforce a continuous emission standard under §112(d) and promulgate “work practice or operational standards instead” under §112(h). *Sierra Club*, 441 F.3d at 1028 (internal quotations omitted).

Moreover, this reading is consistent with CAA § 112(h)(4). That provision states, “[a]ny standard promulgated under paragraph (1) shall be promulgated **in terms of an emission standard** whenever it is feasible to promulgate and enforce a standard in such terms.” (Emphasis added). In light of the D.C. Circuit’s reasoning for distinguishing emission standards from 112(h) work practices, this provision is best read to require that, where EPA finds a continuously applicable work practice is not feasible under CAA § 112(h), it must promulgate “temporary, periodic, or limited systems of control” that resemble a continuous emission standard to the maximum extent possible. H.R. Rep. 95-294, at 92 (1977).⁴

That statutory authority greatly simplifies the development of work practice standards for natural gas fired units. Instead of turning to the alternate stop-gap provisions in §112(h) that apply when continuous emissions standards are not feasible, EPA can focus on the direct establishment of work practices that existing sources use to ensure continuous compliance under §§112(d) and 302(k). For example, if the top 12% of existing natural gas-fired boilers are using tune-ups to achieve their “best performing” status, then EPA has the authority to establish

⁴ The D.C. Circuit’s decision in *Sierra Club v. EPA*, 479 F.3d 875 (D.C. Cir. 2007) does not impact EPA’s separate authority to issue direct work practice emissions standards as described in §302(k). Rather, that case focused on the breadth of EPA’s authority under CAA §112(h), and only held that section authorizes the establishment of work practices **in lieu of an emission standard** where “measuring emission levels is technologically or economically impracticable.” *Id.* at 884. That holding says nothing about EPA’s independent authority to establish work practices **as direct emissions standards** under CAA §112(d) and §302(k).

that protocol as a work practice-based emission standard. Tune-ups are an appropriate emission standard for these units because, if conducted with adequate frequency, they provide continuous reduction of the quantity and rate of HAP emissions from boilers by ensuring that they operate properly.

D. *EPA should similarly establish an annual tune-up work practice standard as the MACT standard for all other gas boilers*

For the reasons discussed above, EPA should establish annual tune-up work practice as the MACT standard for all other gas boilers. Other gas boilers have the same characteristics as natural gas and refinery gas. Indeed, EPA has not identified and cannot identify any technologically feasible means of achieving the stringent proposed standards that apply to all of the units in the subcategories. As discussed *infra* (Section II.B), EPA is therefore required to turn to other methods of control, with tune-ups as the choice justified by EPA's data. Further, many of the other gases are very similar in composition and combustion properties to the Gas 1 subcategory gasses, making a decision to have such dramatically different emission control regimes arbitrary and capricious. Finally, gaseous fuels are clean burning fuels with emissions that are lower than from other types of fuels. Just as EPA recognized that it should not be creating perverse incentives that force operators to turn away from clean Gas 1 fuels, 75 Fed. Reg. 32025, EPA should not create regulatory incentives for operators to turn away from other clean gaseous fuels. EPA should encourage the use of clean burning fuels by allowing work practices that give operating flexibility to maximize combustion efficiency and, thereby, minimize emissions.

E. *EPA should also establish annual tune-up work practice as the MACT standard for biomass boilers*

The rationale that supports the proposed approach for the Gas 1 subcategory applies equally well to biomass boilers and, therefore, provides ample support for adopting work practices instead of numeric emissions limitation for biomass boilers. For example, in the forest products industry alone, the estimated cost of complying with the proposed HAP emissions limitations for biomass boilers is \$3.3 billion. This is an extraordinary cost that, in the context of the forest products industry, equals or exceeds the magnitude of the economic burden that EPA predicts for the Gas 1 subcategory. Similarly severe economic impacts are expected in other industry sectors where biomass boilers are widely use, such as the furniture, sugar, and agricultural products industries. Thus, there is strong economic justification for prescribing work practice standards for biomass boilers in lieu of numeric emissions limitations.

In addition, biomass is a "clean" fuel in many of the same respects as the Gas 1 fuels. Biomass-fired boilers produce no net GHG emissions, which makes the combustion of biomass an important tool in managing and reducing the Nation's carbon footprint. Similarly, biomass is an abundant, renewable domestically-produced fuel that can help reduce reliance on foreign sources of fossil fuel and, thus, improve the Nation's energy security. Prescribing stringent HAP emissions limitations on biomass boilers will create a significant barrier to the continued use and expansion of biomass fuels and incentivize the use of less desirable fossil fuel alternatives.

In light of the inordinate costs of complying with the proposed HAP emissions limits for biomass boilers and the strong policy reasons for promoting the combustion of biomass, EPA has ample justification to prescribe work practices rather than HAP emissions limitations for biomass boilers.

F. *EPA should require only a one time tune-up for smaller boilers and process heaters*

Manufacturers recommends that EPA require only a one time tune-up for smaller boilers and process heaters with rated heat input less than 2 million British Thermal Units (BTUs). Currently, both the South Coast Air Quality Management District and Antelope Valley Air Quality Management District exempt boilers and process heaters with a rated heat input less than or equal to 2 million BTUs per hour from having their burners tuned. Because of the small size of these units, the cost burden of regular tune-ups far outweighs any environmental benefit that may be achieved. Further, the one-time tune-up requirement would constitute an appropriate work practice, as discussed above.

II. EPA's fundamental approach to setting the MACT floor violates the Clean Air Act and is arbitrary and capricious

A. *EPA's HAP-by-HAP approach violates the Clean Air Act and is arbitrary and capricious*

EPA ignored the record evidence of the performance of actual "sources" when establishing the suite of emissions limits. Instead, for each subcategory, EPA set individual limits for each HAP that reflect the best performing source only for that individual HAP. EPA then combined the HAP limits into a suite of emissions standards for each subcategory. This results in a combined set of standards reflecting purely hypothetical boilers that have never actually been achieved by any single, real world source, and possibly never will. Creating hypothetical "best performing" units that demand compliance with emission standards not achieved by any actual source in a subcategory (let alone the necessary 12% of sources for a true floor) is arbitrary and capricious and violates EPA's statutory obligation to establish limits that are based on actual the performance of "sources."

The proposed MACT standards for industrial boilers and process heaters are based on pollutant-by-pollutant analyses that rely on a different set of best performing sources for each separate HAP standard. See, e.g., 75 Fed. Reg. at 32019 ("For each pollutant, we calculated the MACT floor for a subcategory of sources by ranking all the available emissions data from units within the subcategory from lowest emissions to highest emissions, and then taking the numerical average of the test results from the best performing (lowest emitting) 12 percent of sources."). In other words, EPA "cherry picked" the best data in setting each standard, without regard for the sources from which the data come. This approach violates the language of § 112, which is focused on the performance of "sources," and produces arbitrary and capricious standards.

The statute unambiguously directs EPA to set standards based on the overall performance of "sources."⁵ Sections 112(d)(1), (2), and (3) specify that emissions standards must be established based on the performance of "sources" "in practice" for the category or subcategory and that EPA's discretion in setting standards for such units is limited to distinguishing among classes, types, and sizes of sources. In particular, Section 112(d)(3) emphasizes that EPA must focus on what emissions reductions are achievable "in practice" for a "source."

⁵ In the proposed CISWI rule, EPA similarly failed to follow the statutory mandate under Section 129 to examine the performance of "units." For the reasons discussed above, the CISWI standards must be based on actual sources ("units"), and cannot be the product of pollutant-by-pollutant parsing.

(3) New and existing sources. - The maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator. Emission standards promulgated under this subsection for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent, and may be more stringent than -

(A) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information) ... in the category or subcategory for categories and subcategories with 30 or more sources, or

(B) the average emission limitation achieved by the best performing 5 sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources.

These provisions make clear that standards must be based on actual sources, and cannot be the product of pollutant-by-pollutant parsing that results in a set of composite standards that do not necessarily reflect the overall performance of any actual source. Congress provided express limits on EPA's authority to parse units and sources for purposes of setting standards under § 112 and that express authority *does not* allow EPA to "distinguish" units and sources by individual pollutant as is proposed in this rule. *Sierra Club v. EPA*, 551 F.3d 1019, 1028 (D.C. Cir. 2008) (noting statutory limitations on EPA's authority to distinguish sources).

By focusing on a HAP-by-HAP approach and ignoring the performance of "sources" in crafting the proposed rule, EPA has gone beyond a proper exercise of discretion in this proposal and violated the Clean Air Act. EPA has failed to provide any assessment of how many existing boilers and process heaters will be able to meet the proposed standards without taking any further control measures. The arbitrary and capricious nature of EPA's approach is best demonstrated by comparing the standards that EPA ultimately established against the actual performance of existing sources. There is not a single gas-fired boiler or process heater that has been demonstrated in EPA's record to meet all 5 of the numerical emission limits in this proposal at all times.

B. *EPA violated the Clean Air Act by failing to set floors that can be achieved by use of existing emissions controls that are actually in use within subcategories*

1. EPA inappropriately set its floors based purely on a review of emissions data, without examining whether there is existing control technology in use and available to meet those floors

EPA calculated its proposed floors solely on the basis of emission data, without making any effort to evaluate whether technically feasible means of achieving those levels are in actual use and hence generally available to (and thus achievable by) the units within the subcategory. For example, with respect to existing units, EPA stated in the preamble:

EPA must consider available emissions information to determine the MACT floors. For each pollutant, we calculated the MACT floor for a subcategory of sources by ranking all the available emissions data from units within the subcategory from lowest emissions to highest emissions, and then taking the numerical average of the test results from the best performing (lowest emitting) 12 percent of sources.

75 Fed. Reg. at 32019. With respect to new units, EPA stated: “Similar to the MACT floor process used for existing units, the approach for determining the MACT floor must be based on available emissions test data.” *Id.* at 32027. More to the point, the relevant technical support document confirms that, as the preamble implies, EPA in fact based its floor determinations for existing and new units *solely* on the basis of available emissions data, without any examination of whether units have some feasible and proven way of achieving the floors.⁶ Indeed, the technical support document is explicit:

In response to concern over MACT floor analyses based on control technologies, the new approach ranks the performance of each pollutant according to the lowest emitting (based on stack test data), *regardless of control technologies installed on the boiler/process heater.*⁷

Thus, EPA ignored the methodology Congress intended EPA to use in determining the floors for existing and new units, as described in the following subsections.

2. The Clean Air Act requires the Agency to set standards that can be achieved by existing emissions controls in use within the subcategory

The Clean Air Act requires EPA to set standards that can be achieved by existing controls in use within the subcategory. The evidence of congressional intent strongly and unequivocally shows that Congress intended the regulatory machinery of sections 112(d)(1)-(3) to operate so as to: (1) identify those forms of emission control in actual use which produce maximum reductions in HAP emissions when applied to particular units; (2) pursue all existing and new units of the same type, characterized by basic production design to apply those controls or otherwise achieve at least the same reduced level of emissions, either through innovation or some other way; and (3) preserve, protect and enhance the economic vitality of the national economy. Thus, in line with other key provisions of the Clean Air Act, sections 112(d)(1)-(3) are technology-forcing. They are designed to propagate the general use of best HAP emissions control, not to produce dictates achievable only through widespread shutdowns and installation of newly designed production equipment.

Clearly, to implement that Congressional purpose, EPA must base the floors not only on available emissions test data, but also on a determination that some technically feasible means of achieving the floor is generally available to the units within the subcategory, as demonstrated by actual use within the subcategory. Otherwise, if EPA were to base the floors for a particular subcategory only on available test data, without examining technical feasibility and actual

⁶ See ERG, *Mact Floor Analysis (2010) for the Industrial, Commercial, and Institutional Boiler and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source*, at 3, 10 (April 2010) (Docket ID No. [INSERT]).

⁷ *Id.* at 3.

usage, it could produce a MACT standard which most – if not all – of units in the subcategory would have no hope of achieving. That would be a vast distortion of the congressional vision – which is to identify and spread the use of best controls, while preserving economic vitality, not to force widespread shutdowns and re-capitalization within industry segments.

Section 112 is replete with textual evidence that Congress authorized EPA to set a floor *only* at a level which units within a subcategory generally had some means of achieving as a technical matter, as demonstrated by actual usage within the subcategory. In implementing section 112, EPA must give full effect to that textual evidence. See *Whitman v. American Trucking Association, Inc.*, 531 U.S. 457, 485 (2001) (“The EPA may not construe the statute in a way that completely nullifies textually applicable provisions meant to limit its discretion.”).

Key pieces of such evidence are as follows:

- Section 112(d)(2), the overarching directive to EPA for establishing a MACT standard for any given subcategory, requires EPA to set the standard at a level that corresponds to the maximum degree of reduction of HAP emissions that is “achievable” for the subcategory through the “*application* of measures, processes, methods, systems, or techniques.” (Emphasis added.) Sections 112(d)(2)(A)-(E) then define those various forms of emissions control as including a wide range of “measures”. Specifically listed are process changes, materials substitution, enclosures, add-on control technology, work practices, and operational standards. Not listed, or even suggested, were changes to the basic design of the units in question, the HAP-emitting production equipment. Section 112(d)(2) thus reflects and reveals a fundamental conceptual orientation on the part of Congress which is universal to all of the technology-based standard-setting processes dictated by the CAA. In crafting the MACT standard setting process, Congress took production equipment, such as boilers and process heaters, as a given and envisioned that the standards EPA generated would stimulate the “application” of control “measures” to the production equipment, without change to the basic design of the equipment.
- Section 112(d)(3)(A) calls on EPA to set the floor for existing units within a subcategory at the average level actually “achieved” by the best “performing” 12 percent. The use of the terms “achieved” and “performing” imply that Congress had in mind a cause-and-effect relationship between the actual in-use application of one or more of the control measures listed in section 112(d)(2)(A)-(E) to a piece of HAP-emitting equipment and a resulting actual level of reduced emissions from the equipment. The terms indicate that Congress wanted to identify those measures by which EPA could reliably establish norms of behavior for pieces of equipment of like design. In other words, Congress sought to spread the use of those controls proven to be best by actual practice, but not force changes in the fundamental design of production equipment within an industry segment, *e.g.*, through widespread shutdowns and re-capitalization.
- The first sentence of section 112(d)(3) provides: “The maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source” The phrases “reduction in emissions,” “achieved in practice,” and “best controlled” all focus on the application of control measures to HAP-emitting production equipment, especially in juxtaposition with section 112(d)(2). The first sentence of section 112(d)(3) thus confirms that

Congress sought to identify the forms of control that experience showed to be the most effective and that companies could apply in a replicable way without altering the basic design of the production equipment.

- Other provisions of the CAA similarly focus on the application of available and “demonstrated” control technology, namely: section 111 (New Source Performance Standards (NSPS)), section 129 (incinerators), section 165 (Best Available Control Technology (BACT) for certain new construction projects), section 172(c)(1) (Reasonably Available Control Technology (RACT) for existing sources as control by State Implementation Plans), and section 173 (Lowest Achievable Emission Rate (LAER) for certain new construction projects). In each case, the common theme is to establish a behavioral norm based on existing control technologies.

The legislative history of section 112 further confirms that Congress sought to identify and facilitate the spread of best, in-use-proven controls of HAP emissions within the appropriate categories and subcategories of HAP-emitting equipment, without fundamentally constraining the ability of companies to choose the basic design of that equipment. During the Senate debates on the conference bill that became the CAA Amendments of 1990, Senator Durenberger, the primary author of section 112, stated: “For each category of sources, EPA will promulgate a standard which requires the *installation* of maximum achievable control technology (MACT) by the sources in the category.”⁸ Plainly, in Congress’s mind, section 112(d)(1)-(3) would cause companies to take action only to apply controls to an established equipment design, as opposed to cause changes in such design.

3. Indeed, EPA has already recognized that the Clean Air Act requires the Agency to set standards that can be achieved by existing emissions controls in use within the specific subcategory

EPA has previously recognized that the Clean Air Act requires that the Agency set emissions standards that can be achieved by existing controls in use within the subcategory. EPA accepted that it cannot look solely at emissions test data, without regard to whether there is a technically feasible means of emissions control in actual usage within the subcategory which is sufficient to achieve the floor. In its 2004 Boiler MACT rulemaking, EPA made clear that:

[S]etting emission standards on the basis of actual emission data alone where facilities have no way of controlling their HAP emissions would contravene the plain statutory language as well as Congressional intent that affected sources not be forced to shut down.

69 Fed. Reg. 55218, 55233 (Sep. 13, 2004). EPA explained: “This is because the statute requires EPA to set standards that are duplicable by others.” *Id.*

Thus, in 2004, EPA interpreted the CAA as requiring it to determine when it sets the floors whether there are technically feasible means of compliance in actual usage within the subcategory. However, in their challenge to the 2004 Boiler MACT standard before the D.C. Circuit, NRDC and the other citizens groups disputed EPA’s interpretation, contending that EPA

⁸ Committee on Environment and Public Works, U.S. Senate, *Legislative History of the Clean Air Act Amendments of 1990*, S. Prt. 103-38, at 863 (Nov. 1993).

must focus only on actual emission rates in setting the floor.⁹ EPA vigorously defended its view in its responsive brief, saying:

Congress intended EPA to base its standards on the amount of emission reduction sources can achieve by the application of some form of control, and not on the levels some source may emit simply because of characteristics of the source or its operation that cannot be replicated by others.”¹⁰

Moreover, in EPA’s view, it has a duty to examine the technical feasibility of a floor:

Congress did not intend that EPA consider just the level of emissions, *but rather that the Agency consider how those emission levels are achieved and base the standard on the lowest level that can be achieved through the implementation of some sort of emission control.*”

Id. (emphasis added). The court, however, never decided this issue because it vacated the standard on a different ground. See *NRDC v. EPA*, 489 F.3d 1250, 1261 (June 8, 2007).

Manufacturers respectfully urge EPA to uphold its 2004 position. It would be arbitrary and capricious for EPA to change its 2004 approach without adequate justification. Further, as shown above, Congress did *not* authorize EPA to set a floor on the basis of emissions test data, without also determining that there are technologically feasible (as opposed to affordable) means of achieving that floor which actual usage within the subcategory has shown are available to all of the units in the subcategory given their particular basic design. If EPA were to determine that there are no such means of control across the subcategory, it would have to subcategorize further in order to group units of like design or, if that were not practicable, base the ultimate standard on a universally applicable a work practice, such as annual tune-ups, as EPA has proposed here in the case of Gas 1 units.

C. EPA’s failure to use all available “emissions information” violates § 112(d)(3)(a)

Section 112 instructs EPA to set the MACT “floor” for existing sources in categories or subcategories with 30 or more sources at the “average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has *emissions information*)” CAA § 112(d)(3)(A) (emphasis added). In the proposal, EPA interprets this provision as requiring the MACT floor to be calculated using data from the top 12% of sources for which *actual emissions testing data* are available. This is an overly narrow and impermissible approach because it violates the unambiguous statutory obligation to calculate the floor using data from the top 12% of sources for which *any* “emissions information” is available. Specifically, there are plenty of industrial boilers and process heaters for which EPA does not have emissions testing data. However, the Agency has at least some “emissions information” from virtually all sources in the category. For example, EPA knows or can reasonably ascertain the types of fuels and emissions controls used by the vast majority of industrial boilers and process heaters in use today. This is “emissions information” that the Agency has impermissibly disregarded in selecting the group of sources that represent the top

⁹ Environmental Petitioners’ Initial Opening Brief, at 31 (June 12, 2006) (*NRDC v. EPA*, Case No. 04-1385).

¹⁰ Final Brief for Respondent United States Environmental Protection Agency, at 49 (Dec. 4, 2006).

12% of performers. In other words, the term “emissions information” unambiguously encompasses *any* information related to emissions – not just emissions rate information from performance testing or emissions monitoring devices.

Because at least some “emissions information” is available for virtually all sources in the category, EPA must calculate the MACT floor based on data from the best performing 12% of all sources in the category. For example, the preamble explains that EPA has identified 578 sources in the coal-fired boiler subcategory, that PM emissions testing data are available for 366 of these sources, and therefore that the MACT floor for PM for this subcategory must be based on the testing data from the top 44 sources (12% of 366). This approach is contrary to what the statute requires. Because 12% of 578 is roughly 70, and EPA has (or could reasonably obtain) some emissions information from all sources in the category, each MACT floor should be based on the average emissions limitation achieved by the best performing 70 sources.

- D.** *The lowest-emitting sources are not representative of the actual performance of the best performing boilers, and EPA should use the relative performance of air pollution control technology to select the best performing sources*

EPA has established the proposed Boiler MACT floors by equating sources with the lowest emissions for particular HAPS with best performing sources and ignoring other measures of performance that might more accurately demonstrate the best performing sources.

Section 112(d) requires the MACT floor be no less stringent than “the emissions control achieved in practice by the best controlled similar source” for new sources, and the “average emission limitation achieved by the best performing 12 percent of the existing sources,” for existing sources. Section 112(d)(3). Simply put, if Congress intended the MACT floor to be no less stringent than “the lowest emission levels” achieved by sources, it could have said so. “Best controlled” and “best performing” are not with the same as “lowest emission level.”

The D.C. Circuit has never required that EPA equate the “lowest emitting” sources to the “best performing” sources. See *Sierra Club v. EPA*, 167 F.3d 658, 661 (D.C. Cir. 1998) (section 112(d) “on its own says nothing about how the performance of the best units is to be calculated”). In its review of the 1999 portland cement MACT standards, the court endorsed a “technology approach” to setting the MACT standard, whereby EPA would use the relative performance of air pollution control technology to select the best performing sources. In rejecting the view that emissions are the only factor EPA must consider, the D.C. Circuit stated:

According to the Sierra Club, section 7412(d)(3) requires EPA to set new source floors at the lowest recorded emission level for which it has data and existing source floors at the average of the lowest twelve percent of recorded emission levels for which it has data. Nothing in the statute, Sierra Club argues, permits the Agency to set floors based on the performance of technology as opposed to the recorded performance of plants.

In resolving this issue, we do not write on a clean slate. EPA’s technology-based approach to setting new source emission standards has already faced and survived a *Chevron* one challenge. In *Sierra*, 334 U.S. App. D.C. 421, 167 F.3d 658, we reviewed a new source emission standard for solid waste combustion that EPA promulgated pursuant to section 7429, which establishes emission requirements virtually identical to section 7412’s. There, as here, the Sierra Club

argued that EPA's MACT technology approach to setting emission standards is unambiguously forbidden by the Clean Air Act. *Sierra* rejected that argument, holding that EPA may estimate the performance of the best performing units and that it was not "impossible" that EPA's methodology constituted a reasonable estimation technique. See 167 F.3d at 665.

Nat. Lime Ass'n v. EPA, 233 F.3d 625, 631 (D.C. Cir. 2000). Thus, the D.C. Circuit endorsed EPA's use of a technology-based approach that uses the relative performance of pollution control technology rather than simply looking to the sources with the lowest emissions test report to set the MACT floor.

Indeed, this was the approach adopted by EPA in the previously promulgated Boiler MACT. There, EPA recognized that while it may be appropriate in certain circumstances to consider primarily available emissions test data, such an approach was ill-suited to setting the Boiler MACT floor:

[A]fter review of the available HAP emission test data, we determined that it was inappropriate to use this MACT floor approach to establish emission limits for boilers and process heaters. The main problem with using only the HAP emissions data is that, based on the test data alone, uncontrolled units (or units with low efficiency add-on controls) were frequently identified as being among the best performing 12 percent of sources in a subcategory, while many units with high efficiency controls were not. However, these uncontrolled or poorly controlled units are not truly among the best controlled units in the category. Rather, the emissions from these units are relatively low because of the particular characteristics of the fuel that they burn, that cannot reasonably be replicated by other units in the category or subcategory. A review of the fuel analyses indicate that the concentration of HAP (metals, HCl, mercury) vary greatly, not only between fuel types, but also within each fuel type. Therefore, a unit without any add-on controls, but burning a fuel containing lower amounts of HAP, can have emission levels that are lower than the emissions from a unit with the beset available add-on controls. If only the available HAP emissions data are used, the resulting MACT floor levels would, in most cases, be unachievable for many, if not most, existing units, even those that employ the most effective available emission control technology.

69 Fed. Reg. at 55,233 (emphasis added).

It appears that EPA's decision in the proposed rule to equate best performance with lowest emissions, rather than with any other means of measuring performance, is based on a parenthetical phrase found in the *Brick MACT* decision, which refers to the "best performing" sources as "those with the lowest emission levels." This isolated statement is dictum; it is not a necessary underpinning of the *Brick MACT* decision, nor is it supported by any other D.C. Circuit decision.

In *Brick MACT*, the D.C. Circuit affirmed its decision in *Cement Kiln* that EPA cannot redefine "best performing" to mean those sources with emission levels achievable by all sources:

But EPA cannot circumvent *Cement Kiln's* holding that Section 7412(d)(3) requires floors based on the emission level actually achieved by the best

performers (those with the lowest emission levels), not the emission level achievable by all sources.

Brick MACT, 479 F.3d at 880-81 (citing *Cement Kiln*, 255 F.3d at 861). EPA interprets this dictum (it was unnecessary to resolution of the issue before the court) to prohibit the adoption of any measure of “best performing” other than lowest emission levels. 75 Fed. Reg. 32010. This is an unnecessarily narrow view of the language in *Brick MACT*. For one, the *Brick MACT* decision did not overrule either of the *Nat'l Lime* or *Sierra* decisions, in which the D.C. Circuit approved approaches that did not simply equate “best performing” sources with “those with the lowest emission levels.” Faced with demonstrably contradictory yet binding precedent, EPA has without explanation elected to follow non-binding language that would appear to place great restraint on EPA’s discretion. It is arbitrary for EPA to attempt to apply its discretion in this manner when on other occasions it has repeatedly asserted its discretion to characterize “best performing” sources by criteria other than simply the lowest emission level.

Indeed, EPA has not explained why it views the parenthetical dicta in *Brick MACT* as legally-binding interpretation of the statutory language rather than simply an explanatory description of the yardstick for measuring “best performers” in *Cement Kiln*. If the D.C. Circuit has been addressing the *National Lime* or *Sierra* cases, perhaps it would have used a different description of the “best performer” that comported with EPA’s approach in those rulemakings. There is simply no reason to read the *Brick MACT* language as globally and definitively the way EPA does here when there is an alternative interpretation that harmonizes *Brick MACT* with prior and still binding case law.

Furthermore, EPA’s interpretation of *Brick MACT* collides with Section 112(d)(3) and other D.C. Circuit decisions requiring EPA to take nontechnological and nonintentional factors into consideration if they impact emissions levels achieved in practice by sources, particularly as EPA is also advocating a “pollutant-by-pollutant” approach to setting the MACT floor. For example, if a source utilizes a technology that dramatically lowers its emissions of a particular HAP but at the same time increases its emissions of other HAPs or other air pollutants, EPA takes those factors into account when setting the MACT floor and must devise a reasonable way to address such factors in its methodology. But under EPA’s current interpretation of *Brick MACT*, EPA would be constrained to identify the lowest emitters of that particular HAP as the best performing sources regardless of any collateral negative impacts. The CAA clearly provides EPA with much more discretion than that.

EPA itself has, since *Brick MACT*, acknowledged its discretion to define “best performing” sources in a manner that accounts for all the relevant factors. Though EPA modified its approach in the final rule, in its notice of the proposed Hazardous Waste combustor (“HWC”) Reconsideration Rule, EPA justified using control efficiency, rather than the simplistic emissions levels, in defining “best controlled” and “best performing” hydrochloric acid production furnaces:

First, the statutory language requiring floors to be based on “best controlled” (new)/“best performing” (existing) does not specify whether “best” is to be measured on grounds of control efficiency or emission level. See *Sierra Club v. EPA*, 167 F.3d 658, 661 (“average emissions limitation achieved by the best performing 12 percent of units...on its own says nothing about how the performance of the best units is to be calculated”). The requirement that the new source floor reflect “emission control” achieved in practice reinforces that the standard can be determined and expressed in terms of control efficiency.

Existing floors determined and expressed in terms of control efficiency are likewise consistent with the requirement that the floor for existing sources reflect “average emission limitation achieved,” since “emission limitation” includes standards which limit the “rate” of emissions on a continuous basis—exactly what the standards do here. CAA section 302(k). Moreover, where Congress wanted to express performance solely in terms of numerical limits, rather than performance efficiency, it said so explicitly. See CAA section 129(a)(4).

Solicitation of Comments on Legal Analysis, 72 Fed. Reg. 54,875, 54,884 (Sept. 27, 2007). While the HWC Final Rule hews to the unduly narrow view of the *Brick MACT* decision embraced by EPA here, in it EPA nonetheless observed that “Standards requiring HAP reduction of a given percent limit the emission quantity, rate, and (in any realistic scenario) concentration of the HAP and so falls squarely within the statutory definition [of emission standard].” See *Reconsideration Final Rule*, 73 Fed. Reg. 64,068, 64,087 (Oct. 8, 2008).

EPA takes an unnecessarily narrow view of *Brick MACT*, compelled neither by section 112 nor by the D.C. Circuit’s opinion itself, robbing itself of the discretion to engage in an analysis that reflects reality. EPA has historically demonstrated persuasively why the Agency might in its discretion choose some other or more complex measure of what a “best performing” source is. The data here indicates that such an approach—which accounts for operational and other variability that undermines any straightforward connection between the “lowest emitters” and the “best performing” sources—would be justified.

E. *EPA’s proposal to use emissions data from fewer than five sources to determine the existing source MACT floor for some subcategories is inconsistent with the Clean Air Act*

The Clean Air Act does not allow EPA to rely on only on 1-2 data points to set limits for certain subcategories with more than 30 units in the subcategory. In order to follow Congress’s intent, EPA needs to use at least the 5 lowest values to set the limits, as the Agency would be required to do if the subcategory had fewer than 30 units.

EPA explains in the proposal that “the proposed new and existing source MACT floors are almost identical [in three instances] because the best performing 12 percent of existing units (for which we have emissions information) is only one or two sources.” 75 Fed. Reg. 32022. EPA further explains that, “[t]he reason we look to the best performing 12 percent of sources, even though we have data on fewer than 5 sources, is that these subcategories consist of 30 or more units.” *Id.* The Agency believes that a “plain reading” of § 112(d)(3)(A) requires it to use the top 12% of sources for which it has emissions data for source categories with 30 or more sources, even in cases where the available emissions data are limited, such that the top 12% is represented by only one or two sources.

As a possible alternative to this approach, EPA asks for comment on whether “we should consider reading the intent of Congress to allow us to consider five sources rather than just one or two.” *Id.* EPA suggests that, by requiring data from 5 sources to be used for source categories with fewer than 30 sources, Congress was concerned that the floor should be determined using “a minimum quantum of data.” EPA posits that, if 5 is the “minimum quantum” for source categories with fewer than 30 sources, then it is natural to conclude that the “minimum quantum” should be no less than 5 source for categories with 30 or more sources.” *Id.*

Manufacturers support EPA's proposed alternative approach of using no fewer than 5 sources in setting the MACT floor for any source category – regardless of the number of sources in the category or subcategory. Congress clearly anticipated enough emissions information to be available for larger source categories to generally cause more than 5 sources to constitute the top 12%. It makes no sense for Congress to specify a minimum number of sources for source categories with few sources, but then to create a rule that would allow for standards to be set using data from fewer than 5 sources in larger source categories. Using no less than 5 sources would give effect to the clear intention of Congress.

We also note that the word “sources” as used in the last clause of §§ 112(d)(3)(A) and (B) is ambiguous and, therefore, susceptible to reasonable interpretation by the Agency. As EPA explains in the preamble, the word “sources” might be construed to refer to all sources in the given category or subcategory. *Id.* However, the word “sources” in the first clause of §§ 112(d)(3)(A) and (B) clearly refers to the sources for which EPA has “emissions information.” Notably, the second use of the word “sources” in § 112(d)(3)(A) also clearly is a reference to sources for which EPA has “emissions information.” So, it is reasonable to conclude that Congress intended the word “sources” to have a consistent meaning for all purposes under these specific provisions of § 112(d). In other words, the reference “30 or more sources” at the end of § 112(d)(3)(A) and “fewer than 30 sources” at the end of § 112(d)(3)(B) reasonably should be construed as a reference to sources for which EPA has emissions information. This interpretation avoids the “absurd results” described above and allows for EPA to naturally reconcile the application of §§ 112(d)(2)(A) and (B) such that the number of sources for which EPA has emissions information in a given category or subcategory dictates whether § 112(d)(2)(A) or (B) should apply.

III. EPA violated the CAA by promulgating a standard that is neither “achievable” nor “achieved in practice” by existing “sources”

The Clean Air Act requires EPA to examine whether emissions standards are “achievable” and “achieved in practice” by existing sources. As Judge Williams explained:

Section 112(d)(2) calls for emissions standards that are the most stringent that the EPA finds to be “achievable,” taking into account a variety of factors including cost. 42 U.S.C. § 7412(d)(2)... Section 112(d)(3) provides that the standards “shall not be less stringent” than the emission controls that have been “achieved in practice.” 42 U.S.C. § 7412(d)(3) ... The “achievable” standards have come to be known as the “beyond-the-floor” standards, ... meaning, obviously, ones more stringent than the “floors” established under § 112(d)(3). The language thus embodies an assumption that standards based on achievability will be more stringent than ones based merely on past achievement.

Sierra Club v. EPA, 479 F.3d 875, 884 (D.C. Cir. 2006).

A. EPA has established emissions limits that existing sources, and even new sources, do not and cannot achieve

As a result of the problems inherent in EPA's floor setting approach (e.g., HAP by HAP approach discussed *supra*) and data collection/analysis, the limits that EPA has established for many subcategories are not ones that are being achieved by any existing sources. Even more indicative of the inherent problems in the proposed rule is the fact that the record does not

establish that even new sources can be expected to be able to achieve the limits that EPA has proposed.

B. *EPA cannot identify technology or techniques that exist to meet the emissions limits*

As discussed above (Section II.B), EPA made no effort to determine whether there is emissions control technology that is in use in each of the various subcategories that can achieve the emissions limits that the Agency has proposed. Had EPA undertaken that required investigation, it would have found that no such emission control technology exists. There is not a single boiler in EPA's emissions database that meets each of the emissions limits that EPA is proposing in the Boiler MACT rule.

C. *EPA has, thus, violated the admonition that what is "achieved in practice" and what is "achievable" must be "in accord with common sense and the reasonable meaning of the statute"*

EPA has exceeded its authority under § 112 by paradoxically setting standards that are not "achievable" on the basis of emissions levels that have been "achieved" in practice by the better performing sources in the given subcategories. This outcome is an actual manifestation of what Judge Williams only hypothesized might occur in his concurrence in the "Brick MACT" decision. See *Sierra Club v. EPA*, 479 F.3d 875 (D.C. Cir. 2006) ("Brick MACT decision").

Judge Williams observed in his concurrence this potential problem with the § 112 standard setting procedures. He noted that § 112(d)(3) requires MACT "floors" to be based on emission controls that have been achieved in practice, while the "above the floor" analysis required by § 112(d)(2) is based on what is achievable. Taken together, he concluded that, "[t]he language thus embodies an assumption that standards based on achievability will be more stringent than ones based merely on past achievement." *Id.* at 884.

In his view, this creates the possibility that what has been "achieved" under § 112(d)(3) would not be "achievable" under § 112(d)(2) – i.e., "as applied to some sources, the floor compelled by the statutory language appears to be more stringent than "beyond-the-floor." *Id.* at 884-885. This creates the possibility that "we might be talking of a statute whose literal words produc[e] a result so demonstrably at odds with the intentions of its drafters as to justify judicial surgery." *Id.* at 885 (internal punctuation and citations omitted).

Judge Williams concludes, however, that "happily" we do not face such a situation because the authority to subcategorize generally should allow the Agency to make sure "the relation between 'achieved' and 'achievable' is in accord with common sense and the reasonable meaning of the statute." *Id.*

Unfortunately, the Agency's rationale for subcategorization in the Industrial Boiler MACT proposal does not reflect any analysis of how the proposed subcategories will help assure that what has been "achieved" by the better performers in a proposed subcategory results in a standard that is "achievable" by the other sources in that subcategory. Consequently, as illustrated above, the resulting proposed standards are not reasonably achievable by a preponderance of affected sources. This result violates EPA's obligation to determine subcategories and to otherwise structure the rule should that the requirement to set standards based performance that has been "achieved" does not overtake what is generally "achievable" by affected sources.

IV. The proposed standards are arbitrary and capricious in light of extensive data quality problems

The Clean Air Act § 112(d) requires EPA to set a MACT floor for existing sources that is not less stringent than “the average emission limitation achieved by the best-performing 12 percent of the existing sources (for which the Administrator has emissions information).” See 42 U.S.C. § 7412(d); *Nat. Res. Def. Council v. EPA*, 489 F.3d 1250, 1254 (D.C. Cir. 2007). The top 12% “best performing” sources are known as “MACT floor units” or “units comprising the MACT floor.” Given the extensive problems discussed below with the data regarding those MACT floor units, EPA’s acted arbitrarily and capriciously in proposing emissions standards.

A. *EPA has not used data that is adequate to represent the actual performance of the top 12% best performing sources. Instead, EPA improperly “cherry picked” emission test data for the top 12% to set the MACT floor*

1. EPA arbitrarily and capriciously failed to collect adequate data upon which to promulgate this rule

EPA has been working on the Industrial Boiler MACT standards in one fashion or another for better than 15 years and has been abundantly aware of the need to set these standards since the 1990 Clean Air Act Amendments were enacted almost 20 years ago. Despite this long run-up to the proposed rule, the Agency has a paucity of data available to set the existing source standards.

EPA’s Tables 2 and 3 in the preamble make clear just how sparse are the data underpinning the proposed rule. Using biomass-fired boilers as an example, Table 2 shows that the subcategory includes 420 sources, yet EPA has emissions testing data on 192 units for PM, 91 units for mercury, and 92 units for HCl – 46%, 22%, and 22% data availability, respectively. The numbers are much lower for many other pollutants and subcategories. 75 Fed. Reg. 32022 – 23. The relative lack of data is a fundamental problem, because EPA construes the statute as requiring it to set existing source MACT floors based on the top performing 12% of sources for which it has data for the larger source categories and subcategories. Less data means the pool from which the top 12% is drawn is smaller and, therefore, the actual number of sources used to determine the MACT floor is smaller.

Without apparently knowing whether the limited available data is statistically representative of the entire subcategory (such that calculating the MACT floor with fewer sources would result in approximately the same value as the MACT floor using data from the entire subcategory), then it must be presumed that the lack of data likely significantly skews the true results. However, the proposed rule and supporting documentation provide no assurance that the limited available data are representative of the entire source category. As a result, we have no way to know if the available data are producing a MACT floor that is reflective of the subcategory as a whole. In fact, as discussed below, there is every indication that the data are severely and inappropriately skewed. Thus, the lack of data call into question the validity of the MACT floor determinations and resulting MACT standards.

While it is true that the statute allows EPA to determine the MACT floor based on sources “for which the Administrator has emissions information,” this provision does not excuse EPA from using its resources and legal authority to obtain a reasonable and reliable sample and as much information as it reasonably can prior to setting MACT standards. In this case, EPA has had 15 to 20 years to gather the requisite information. The fact that, at this point, data on

only a small subset of sources in each subcategory is available represents an abdication of EPA's responsibility and renders the resulting standards arbitrary and capricious.

2. EPA arbitrarily and capriciously "cherry picked" the data, biasing the data toward top performers in Phase II sampling

EPA's process and approach to data collection resulted in the Agency "cherry picking" the data, with the dataset arbitrarily and capriciously biased towards top performers. During the Phase I Boiler MACT data collection effort, EPA requested and received emissions data from most of the potentially affected sources across all of the subcategories for PM, CO, NO_x and many HAPs. After sifting the Phase I data, EPA developed a Phase II plan for collecting additional data, which identified the specific tests that would be required for the different HAPS. The Phase II plan consisted of two rounds of testing. The first round consisted of an outlet stack test (three runs) for PM (filterable, condensable, and PM_{2.5}), dioxin/furans, HCl/hydrogen fluoride, mercury, metals, CO, THC, formaldehyde, NO_x and SO₂. In addition, six facilities (two coal-fired, two biomass-fired and two gas-fired boilers) were required to collect CO, THC and NO_x CEM data over 30 operating days, and each selected unit was also required to collect and analyze the materials fed to the combustion unit during each stack test. 75 Fed. Reg. 32,010. In selecting units for this Phase II testing, EPA targeted coal and biomass-fired boilers and any boiler that indicated that it burned waste. During this second round, however, EPA targeted only those sources whose data EPA determined it would need to set the MACT floor. *Id.*

In this way, EPA artificially limited the pool of data from which it drew its top 12% best performing sources. This is patently at odds with section 112(d) and with the intent of Congress in establishing this framework, which is intended to maximize the data considered by EPA. The result is completely arbitrary because EPA's sampling approach for Phase II created a dataset that is not shown to be representative of sources for which the data is being used to infer emissions for purposes of establish the MACT standards..

3. EPA arbitrarily and capriciously relied on data that does not meet the agency's own requirements for representativeness to set the MACT floors

Representativeness is the measure of the degree to which data accurately and precisely represent a characteristic of a population. *Guidance on Choosing a Sampling Design for Environmental Data Collection*, EPA QA/G-5S, p. 1 (U.S. EPA 2002). In Phase II of the data collection, the ICR, EPA did not randomly select sampling units, a hallmark of probability-based sampling. Rather, EPA selected sampling units based on its understanding of which sources it would likely include in the MACT floor. EPA's approach is a form of "judgmental sampling," which EPA defines at the "selection of sampling units on the basis of expert knowledge or professional judgment." *Id.* at p. 10. According to EPA, probabilistic sampling is preferable where EPA wishes to draw quantitative conclusions about the sampled population through statistical inferences. *Id.*, p. 10-11. When using judgmental sampling, however, EPA states that "statistical analysis cannot be used to draw conclusions about the target population," and "quantitative statements about the level of confidence in an estimate (such as confidence intervals) cannot be made." *Id.* at p. 11. Yet this is precisely what EPA has done in the proposed Boiler MACT. EPA's Phase II data collection is being used incorrectly to make statistical inferences about emissions of boilers in any given subcategory overall.

This approach does not meet EPA's own standards for data quality:

Judgmental sampling has some advantages and is appropriate in some cases, but the reviewer should be aware of its limitations and drawbacks. This type of sampling should be considered only when the objectives of the investigation are not of a statistical nature (for example, when the objective of the study is to identify specific locations of leaks, or when the study is focused solely on the sampling locations themselves). Generally, conclusions drawn from judgmental samples **apply only to those individual samples; aggregation may result in severe bias due to lack of representativeness and lead to highly erroneous conclusions...Using a probabilistic statement with a judgmental sample is incorrect and should be avoided as it gives an illusion of correctness where there is none.**

Data Quality Assessment: A Reviewer's Guide, EPA QA/G-9R, p. 11 (U.S. EPA 2006) (emphasis added). This severe bias is evident in the MACT floors set by EPA, which were set, not by examining data from randomly-selected sources representative of the sources as a whole and then averaging the 12% best-performing sources, but rather by examining data reflecting only EPA's best guess as to the best-performing sources, and then averaging the 12% best-performing of those. This fundamentally skewed the universe of data that EPA had to consider, and it led to the arbitrary outcome of floors that are more stringent than would have resulted from a fair and random sampling of the regulated sources.

B. *EPA's use of emissions data at or below the analytical detection limit introduces an improper bias to setting the MACT floor*

EPA acknowledges that data used to support this rule were often reported near or below a test method's pollutant detection capability. Thus, the Agency observes that "the inherent imprecision in the pollutant measurement method has a large influence on the reliability of the data underlying the regulatory floor or beyond-the-floor emissions limit." 75 Fed. Reg. at 32,020. EPA recognizes that when setting a floor emissions limit, "including values at or near the method detection level may not adequately account for data measurement variability." *Id.* Remarkably, despite recognizing this fact, EPA did not adjust the calculated floor for the data used. *Id.* Rather, EPA proposed a three-step process for defining a "method detection level that is representative of the data used in establishing the floor emissions limits and also minimizes the influence of an outlier test-specific method detection value." 75 Fed. Reg. at 32,201. EPA requested comment on this approach. We believe this approach is unworkable because EPA's fundamental approach to defining the detection level itself is in error.

EPA specified that in-stack detection limits (ISDL) be calculated from laboratory detection limits (as 'floor' values) and actual test run data. This approach misrepresents reality in two significant ways. First, EPA defines detection limit as the lowest value differentiable from zero, a departure from the conventional definition of a detection limit as the lowest value differentiable from a blank. Second, EPA's calculation of ISDL ignores the variability in method performance introduced by sampling and related activities, including sample train preparation and recovery. The result of using these unrealistic assumptions to calculate ISDLs are unrealistically and indefensibly low emissions estimates, drawn, as noted above from a series of tests wherein 'ND' is the most common analytical result.

In order to establish emission limits at the already low detection levels that EPA proposes, simply correcting unrealistically low lab detection limits will not produce realistic ISDLs; it is also necessary to include sampling method variability.

The entire Boiler MACT ICR project represented an enormous departure from the way source emissions testers usually work. The process lacked the usual site-specific protocol / agency approval process, agency guidance on data quality, and clear project objectives other than completing some kind of testing prior to the deadline. The result is a great many indeterminate test results, and a very small number of results useful for emissions limits determinations, making the limits determined thereby statistically suspect. As a result, EPA's entire approach, relying as it does on comparing the proposed floor to the detection limit, must be reconsidered.

C. *EPA's data is rife with errors*

As our members and other organizations review the data underlying EPA's proposed rule, we continue to identify notable errors that renders the data utterly unreliable and thus in violation of Clean Air Act standards. This include errors in fuel and boiler categorizations, errors in calculation of detection limits, errors in measurement techniques that render test results invalid, and others. Fundamentally, failure to correct such data errors will result in arbitrary and capricious rulemaking.

Errors have been found in data from sources that EPA has identified as "top performers." Errors in "top performer" data is particularly problematic, because that data are the foundation for EPA's calculation of MACT floors that will apply to all sources in the same subcategory emitting that pollutant. Specific examples of such data errors are specifically detailed in comments by others, but include: a top performer in the Gas 2 subcategory actually burns petroleum coke and not coke oven gas; the CO limit for biomass stoker boilers was based on top performer data from a suspension burner that was misclassified as a stoker; the dioxins/furans limit for biomass stoker boilers and coal fluidized boilers was based on data that had been reported on a Toxic Equivalency Quantity (TEQ) basis and was mistakenly corrected to its TEQ value a second time, resulting in values an order of magnitude lower; the Hg limit for biomass boilers was based on data that did not follow the required Method 29 procedures, where the source has recently asked EPA to remove data from the database.

To resolve this problem, EPA must conduct a thorough review of the database, correct or eliminate the flawed data, recalculate the MACT floors and associated proposed standards, and provide a new opportunity for public comments (including sufficient time for commenters to conduct their own comprehensive review of the data). Finalizing the proposed standards with these underlying errors would render the standards immediately indefensible. See *e.g.*, *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998) ("An agency's use of a model is arbitrary if that model "bears no rational relationship to the reality it purports to represent.")

V. **EPA arbitrarily and capriciously failed to properly consider variability**

As a general matter, Manufacturers fully support EPA's proposal to account for variability in emissions from the better performers when determining floor levels of control. Accounting for variability has been upheld as appropriate and lawful by the D.C. Circuit and, in any event, is necessary to fully characterize the performance of the sources used to set standards under § 112. However, as discussed below, EPA failed to properly address variability when it set the MACT floors.

In evaluating the emission limits achieved by existing sources, EPA is required to estimate the variability associated with all factors that impact a source's emissions, including

process, operational and non-technological variables. See *Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 443 (D.C. Cir. 1980). Any method used to estimate emissions rather than actually measure them “must ‘allow a reasonable inference as to the performance of the top 12 percent of units,’” and EPA must show “*why* its methodology yields the required estimate.” *Cement Kiln Recycling Coalition v. EPA*, 255 F.3d 855, 862 (D.C. Cir. 2001) (emphasis in original) (citing *Sierra Club v. EPA*, 167 F.3d 658, 663 (D.C. Cir. 1999)).

EPA has acknowledged this responsibility in general and identified a number of factors that contribute to variability in emissions test data, including (1) the emission test method; (2) the emission analytical method; (3) the design of the unit and the control device(s); (4) operating conditions of the facility and the control device(s); and (5) the composition and relative amounts of fuel constituents in the fuel or flue gases. See *Prop. Nat'l Emissions Std. for Haz. Air Pollutants for Electric Utility Steam Generating Units*, 69 Fed. Reg. 4,652, 4,670 (Jan. 30, 2004).

A. EPA arbitrarily and capriciously failed to properly consider the full range of variables potentially impacting emissions

EPA is correct to incorporate variability analysis into the MACT floor analysis in this rulemaking, but EPA's analysis does not appear to reflect the full range of variables potentially impacting emissions. Variability in boilers depends on price fluctuations and changing availability of various fuel types (both between fuel categories and between types of the same fuel, e.g., No. 2 oil and No. 6 oil), as well as a host of other operating and load conditions. While EPA evaluated some of these variables, it did not evaluate a sufficient number to provide “an accurate picture of the relevant sources' actual performance.” *Cement Kiln Recycling Coalition*, 255 F.3d at 862 (emphasis in original). For example, EPA does not have fuel quality data for all top performers, nor is it clear that has EPA made available all of the fuel quality data that it received for top performers. As a result, commenters cannot review the data to discern the relationship between the fuel quality variability for each top performer and the emissions data.

While EPA did consider a wider range of units for variability in coal, variability in coal quality occurs within individual seams and within one unit's supply, which may come from different sources, and EPA's testing did not account for this difference in fuel quality. If considering variability in fuel quality across different types of fuel within a single subcategory is too difficult, that may be an indication that EPA should subcategorize based on fuel types down to specific fuels and materials. Additional subcategorizing within fuel groups may be particularly warranted here, given that EPA has (rightfully) ruled out fuel switching, which would in any event be impossible for many regulated sources. Section 112(d)(1) authorizes the Administrator to “distinguish among classes, types and sizes of sources within a category or subcategory,” and the Agency's discretion in identifying these subcategories quite broad, perhaps simply “limited by the usual ideas of reasonableness.” See *Brick MACT*, 479 F.3d at 885 (Williams, J., concurring).

The overall lack of data magnifies another problem in EPA's approach to setting the MACT floors: EPA's analysis identifies a number of higher emissions data points that the Agency has exclude as “outliers” without providing sufficient explanation. In addition, EPA appears to have discounted “outliers” for fuel quality but not for emissions data. Without some explanation from the Agency, it is impossible for the public to determine whether this discrepancy in treatment of data is justified. For example, EPA excluded 25% of the analyzed sources in the biomass fuel category in its mercury fuel analysis variability factor outlier analysis without explaining how fully one-quarter of the sources can be statistical outliers. See *ERG*

MACT Floor Analysis, Appendix A-1a. Even the best performing sources occasionally have spikes. *Mossville Environmental Action Now v. EPA*, 370 F.3d 1232, 1242 (D.C. Cir. 2004). The D.C. Circuit has held that an accurate picture of the lowest emission limitation that has been “achieved in practice” refers to the performance of the source “under the worst foreseeable circumstances.” *Sierra Club v. EPA*, 167 F.3d 658, 664 (D.C. Cir. 1999). In *Sierra Club*, the D.C. Circuit said that where a statute requires that a standard be “achievable,” it must be achievable “under most adverse circumstances which can reasonably be expected to recur.” *Id.* (citing *National Lime Ass’n*, 627 F.2d at 431 n. 46). “The same principle should apply when a standard is to be derived from the operating characteristics of a particular unit.” *Id.* Again, without some explanation for why EPA has elected to exclude outliers for fuel variability, regulated sources have no way to determine whether the emissions limits proposed by EPA are achievable considering the variability in fuel quality.

As a result, EPA has calculated a multiplier factor that has an extremely low variability impact versus the 99% UPL that simply fails to account for all variables and fuel quality variability present in the top 12% best-performing units across all the subcategories, and certainly across all regulated units.

B. *EPA’s reliance on performance testing data arbitrarily and capriciously fails to capture the true variability expected under actual operating conditions*

EPA primarily relies on emissions testing data in determining the proposed MACT floors and corresponding MACT standards. Variability is generally accommodated by performing statistical analyses of the data to predict the upper confidence limit and, therefore, the emissions level above the straight numeric average at which the better performers might be expected to operate. For standards for “fuel related HAP,” EPA additionally investigated variability associated with differences in fuel quality over time. For standards for “combustion-related HAP,” EPA additionally investigated variability that might be associated with different firing rates or operating loads.

We are concerned about the particular method of accounting for variability employed by the Agency in the proposal. EPA proposes to account for both “within test” and “between test” variability by calculating the 99.9% upper confidence level of the available and relevant emissions testing data, which is calculated as the mean value of the data plus an amount equal to 3.09 times the standard deviation. In concept, such an approach may initially appear rational because setting the floor at the 99.9% confidence interval ostensibly would cause the floor to encompass virtually the entire range of emissions reasonably expected by the better performing sources from which the data were derived. In practice, however, this approach is flawed because the underlying data are not, in fact, representative of the range of expected operations and true variability that reasonably should be expected from the better performers. The reason is that the emissions data relied upon in the proposal were produced during reference method performance testing rather than during day-to-day operations.

Performance testing is required to be conducted under “representative operating conditions.” See 40 C.F.R. § 60.55c(b)(1). The rules do not define the term “representative operating conditions.” However, EPA’s National Stack Testing Guidance suggests that such conditions: (1) represent the range of conditions under which the facility expects to operate (regardless of the frequency of the conditions); and (2) are likely to most challenge the emissions control measures of the facility (but without creating an unsafe condition). Clean Air Act National Stack Testing Guidance at 14. This guidance further defines “representative” as “normal” as it states that “The MACT program further defines representative performance as

normal operating conditions” and again when describing the performances test conditions as described above to be “under...those representative (normal) conditions....” *Id.*

Properly conducted, performance tests are, indeed, a reliable measure of compliance at a given point in time with the relevant standard. However, such tests typically should not be expected to reveal the true range of variability in operating conditions because sources strive to maintain rigorous, yet consistent, operating conditions during tests, between testing runs within a given testing session, and between testing sessions. As indicated by the Stack Testing Guidance, the goal of performance testing is to challenge the applicable control device or control measure to assure that compliance will be maintained under rigorous conditions. Variable operations during testing are inconsistent with the purpose and intent of such testing.

Moreover, while owners and operators may seek to conduct testing at reasonable worst case conditions to assure compliance during less rigorous conditions, it is entirely possible that operations during less rigorous conditions could nevertheless accommodate variation that would not threaten compliance with the standard, but nevertheless could be relevant when the data are used to set standards on a pollutant-specific basis rather than a unit-specific basis. As a hypothetical example, the most rigorous testing condition for HCl emissions from a given boiler might be a feed with high halide content. Thus, it would be logical for testing to be performed under these conditions. However, other HAP constituents in the feed – such as metals – would not necessarily be at “worst case” levels during testing focused on halides. In this scenario, the testing might show extremely low levels of metals emissions, which would not necessarily reflect the higher levels of such emissions that might occur during normal operations.

VI. EPA should establish additional subcategories

A. *The Clean Air Act provides EPA with discretion to subcategorize based on size, type and class of source*

CAA §112(c)(1) instructs EPA to establish “categories and subcategories” of sources for regulation under Section 112. CAA §112(d)(1) then further provides that EPA “may distinguish among classes, types and sizes of sources within a category or subcategory” when establishing MACT standards. These provisions vest EPA with the clear authority to group like units for purposes of establishing emissions limitations. EPA’s subcategorization decisions, however, must turn on legitimate “class” “type” or “size” distinctions as required by §112(d).

The legislative history explains what Congress meant when it authorized EPA to distinguish among sources by “class” “type” or “size.” The relevant Senate Report indicates that EPA should:

[T]ake into account factors such as ***industrial or commercial category, facility size, type of process and other characteristics of sources which are likely to affect the feasibility and effectiveness of air pollution control technology. Cost and feasibility are factors which may be considered by the Administrator when establishing an emission limitation for a category under Section 112 . . .*** where a group of sources may share the characteristics of other sources in the category, the Administrator may establish subcategories for such sources.

S. REP. NO. 228, 101st Cong., 1st Sess. 166 (emphasis added).

That language has two key implications. First, it confirms that Congress' use of the broad concepts of "class" "type" or "size" was meant to allow subcategorization based on (and require consideration of) a broad array of factors. That is particularly true given Congress' open-ended statement that EPA should consider "other characteristics of sources" when grouping them for purposes of establishing emissions limits. Second, this statement confirms that, while cost issues alone may not be sufficient to require subcategorization, costs **are relevant** to subcategorization decisions. *See also, Id.* (indicating that subcategorization "**wholly** on economic grounds" is inappropriate) (emphasis added). By clarifying that individual facilities may not be granted *categorical* waivers "based on assertions of extraordinary economic effect," *id.*, the Senate Report confirms that the threat of severe economic consequences on a subgroup sharing other common attributes supports subcategorization.¹¹

Thus, §112(d)(2) authorizes (and requires) EPA to consider differences in "commercial category, facility size, type of process and other characteristics" that may affect: (1) feasibility of control technology, (2) effectiveness of control technology, and (3) costs of control. Where those factors are present, subcategorization is warranted.

B. *EPA must subcategorize sufficiently to ensure that emissions limits are consistent with the statutory scheme and achievable*

EPA's ability to subcategorize is a key tool in ensuring that MACT floors are achievable. In the Brick MACT decision, Judge Williams wrote about the need to use subcategorization to avoid imposing unreasonable or unachievable MACT floors:

What if meeting the "floors" is extremely or even prohibitively costly for particular plants because of conditions specific to those plants (e.g., adoption of the necessary technology requires very costly retrofitting, or the required technology cannot, given local inputs whose use is essential, achieve the "floor")? For these plants, it would seem that what has been "achieved" under § 112(d)(3) would not be "achievable" under § 112(d)(2) in light of the latter's mandate to EPA to consider here. . . . In other words, as applied to some sources, the floor compelled by the statutory language appears to be more stringent than "beyond-the-floor."

If this were all, we might be talking of a statute whose literal words produced a result so "demonstrably at odds with the intentions of its drafters" as to justify judicial surgery. . . .

Happily § 112 is not such a statute. Section 112(d)(1) authorizes the Administrator to "distinguish among classes, types, and sizes of sources within a category or subcategory," [O]ne legitimate basis for creating additional subcategories must be the interest of keeping the relation between "achieved" and "achievable" in accord with common sense and the reasonable meaning of the statute.

Sierra Club v. EPA, 479 F.3d 875, 884-85 (D.C. Cir. 2007). Thus, EPA has not only the

¹¹ A related House Report confirms that cost implications are relevant to all facets of MACT regulation by providing that "MACT is not intended to require unsafe control measures, or to drive sources to the brink of shutdown." HOUSE REP. NO. 101-490, Part 1, at 328.

authority, but also the obligation to create subcategories where limits may be unachievable for certain units.

C. *EPA's subcategorization approach in the proposed Boiler MACT Rule*

Acknowledging that the “boilers and process heaters source category is tremendously heterogeneous,” EPA “attempted to identify subcategories that provide the most reasonable basis for grouping and estimating the performance of generally similar units using the available data.” 75 Fed. Reg. 32027. In particular, EPA asserts that it established subcategories “based on unit design.” *Id.* at 32012. The preamble includes the following explanatory statements:

- “The design, operating and emissions information that EPA has reviewed indicates differences in unit design that distinguish different types of boilers. Data indicate that there are significant design and operational differences between units that burn coal, biomass, liquid, and gaseous fuels.” *Id.* at 32016 -17.
- “Boiler systems are designed for specific fuel types and will encounter problems if a fuel with characteristics other than those originally specified is fired. . . . Changes to the fuel type would generally require extensive changes to the fuel handling and feeding system. . . . Additionally, the burners and combustion chamber would need to be redesigned and modified to handle different fuel types and account for increases or decreases in the fuel volume. In some cases, the changes may reduce the capacity and efficiency of the boiler or process heater.” *Id.* at 32017.
- Based on these findings, EPA “concluded that the data were sufficient for determining that a distinguishable difference in performance exists based on unit design type.” *Id.*
- It then found core differences between the formation of organic HAPs and fuel dependant HAP. EPA noted that “Organic HAP are formed from incomplete combustion...[which] may be greatly influenced by three general factors: time, turbulence, and temperature.” *Id.* “On the other hand, the formation of fuel dependent HAP (metals, mercury, and acid gases) is dependent upon the composition of the fuel.” *Id.*
- As a result, it identified five basic subcategories for fuel-dependent HAP emissions while proposing eleven more specific subcategories for organic HAP. *Id.*

Although it stated its belief that the chosen subcategories “are appropriate,” EPA has expressly requested comments “on whether additional or different subcategories should be considered.” *Id.* at 32027. It asks that such comments include “detailed information regarding why a new or different subcategory is appropriate (based on the available data or adequate data submitted with the comment), how EPA should define any additional/different subcategories, how EPA should account for varied or changing fuel mixtures, and how EPA should use the available data to determine the MACT floor for any new or different categories.” *Id.*

D. *Manufacturers support the creation of the a number of additional subcategories*

Manufacturers believe that the following additional subcategories should be created:

1. Limited use subcategory

One additional subcategory that merits consideration is for “limited use” units. While the prior Boiler MACT rule treated units with average capacity factors of 10% or less separately, the proposed rule does not continue that approach. Instead, it presumes that limited use units are just like those operated full-time which burn a similar fuel. Limited use sources operate

intermittently and for shorter periods of time (e.g., a backup hospital boiler that runs when other units are being fixed or a peaking unit used to supplement electric generation during particularly hot summer days). Compared to most boilers, these units spend a far greater percentage of their time starting up and shutting down. As a result, their emissions profiles differ markedly from sources which operate in efficient steady-state manners. For example, they are likely to experience higher CO levels as the boiler heats up due to incomplete combustion. Similarly, many pollution control technologies are either difficult to use or ineffective during startup and shutdown periods. These are just the sort of “class” and “type” distinctions which merit consideration for subcategorization under §112(d)(2). Given the limited and sporadic operation of emergency and backup boilers, as well as the technical infeasibility of imposing emission limitations on these units, the limited use subcategory should be limited by work practices in lieu of an emission floor.

- a.** The limited use subcategory adopted in EPA’s 2004 Boiler MACT final rule should be carried forward to the proposed rule

The previous version of EPA’s Boiler MACT recognized that boilers used for emergencies or as backup boilers should be placed in a subcategory due to the limited and unscheduled nature of their use. See National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 69 Fed. Reg. 55218, 55232 (September 13, 2004). EPA recognized that “[t]he boiler database indicates that these infrequently operated units typically operate 10 percent of the year or less,” however, “[t]hese limited use boilers, when called upon to operate, must respond without failure and without lengthy periods of startup.” *Id.* Continued recognition of this subcategory is both supported by recent EPA action and practically justified.

- b.** A limited use subcategory is supported by EPA’s recent similar treatment of emergency and black start compression ignition engines

In March of this year, EPA provided a similar subcategory in its final rule promulgating national emission standards for existing compression-ignition reciprocating internal combustion engines (“CI RICE”) with a site rating of less than or equal to 500 brake horsepower. See National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 9648 (March 3, 2010).

In that Rule, EPA recognized that stationary existing CI RICE should be divided into non-emergency and emergency categories “in order to capture the unique differences between these types of engines.” *Id.* at 9650. Like the limited use boilers described in EPA’s September 13, 2004 rule, EPA recognized that these emergency CI RICE are required to operate infrequently and for relatively short periods of time and must be kept in working order during prolonged periods of time when they are not operating.

EPA cited as justification for its emergency unit subcategorization an earlier memorandum titled Subcategorization and MACT Floor Determination for Stationary Reciprocating Internal Combustion Engines ≤500 HP at Major Sources, Docket No. EPA-HQ-OAR-2008-0708-0006 (January 21, 2009). See National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 74 Fed. Reg. 9698, 9705 (March 5, 2009). This memorandum, in turn, incorporated by reference the rationale found in the memorandum Subcategorization of Stationary Reciprocating Internal Combustion Engines ≤500

HP, Docket No. EPA-HQ-OAR-2005-0030-0012 (May 15, 2006), which enumerated four reasons for creating a subcategory for emergency CI RICE:

1. Emergency use units are used when electric power from the local utility is interrupted or becomes unreliable. The duration of the power outages is entirely beyond the control of the source, and, when they do occur (except in the case of a major catastrophe) they rarely last more than a few hours, often only a few minutes.
2. Emissions from these units are expected to be low on an annual basis; emissions occur only during emergency situations or for a very short time to perform maintenance checks and operator training. State and local regulators generally have not required emission controls for emergency power/limited use units.
3. Add-on catalytic control devices that are most applicable to reduce HAP from stationary RICE would be less effective on an annual basis for emergency use units, since emergency use units generally operate for brief periods. Therefore, a greater percentage of the emergency use units' operation, as compared to operation of peaking or baseload engines, will occur during catalyst warm-up, when the catalyst's effectiveness will be lower.
4. Emergency use units operate for very few hours per year. A survey conducted by the California Air Resources Board indicated that emergency engines are operated about 30 hours per year. Also, the National Fire Protection Association requires 30 minutes per week (27 hours per year) to maintain and test emergency engines. The recently finalized Airborne Toxic Control Measure in California allows districts to approve up to 100 hours per year for maintenance and testing of emergency engines.

Id. at 5-6.¹²

These same criteria justify the establishment of a limited use Boiler MACT subcategory. First, limited use boilers, whether used as backup or emergency use boilers, are put into service only during unexpected failures of the main boiler or “when electric power from the local utility is interrupted or becomes unreliable” both of which are events “entirely beyond the control of the source.” *Id.* at 5. Second, because of their limited use during the year, “[e]missions from these units are expected to be low on an annual basis.” *Id.* Third, for this same reason, a greater percentage of a limited use boiler’s annual operations will be during startup and shutdown, when emissions controls are less effective. See National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 75 Fed. Reg. at 32023. Finally, like emergency CI RICE, limited use boilers operate for only a small portion of the year, typically “10 percent of the year or less.” National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 69 Fed. Reg. at 55232.

¹² While these criteria focus on an “emergency use” subcategory, it is important to note that the limited duration of the use, not the purpose for using the RICE is the key issue. For example, the same rule also creates a subcategory for “black start” engines (engines used to start a turbine generator), which operate during both “emergency and high demand days.” National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 69 Fed. Reg. 55218 at 9662.

Like emergency and black start CI RICE, emergency and backup boilers should be placed into a subcategory that recognizes the unique challenges that would be faced monitoring and controlling emissions from these units.

- c.** Limited use boilers cannot practically demonstrate compliance with standards set relying on continuously operating units

In addition to the unique operating characteristics of limited use boilers, there are practical reasons for creating a limited use subcategory as well. As noted by Judge Williams in *Sierra Club v. EPA*, “Section 112(d)(1) authorizes the Administrator to ‘distinguish among classes, types, and sizes of sources within a category or subcategory’ [O]ne legitimate basis for creating additional subcategories must be the interest of keeping the relation between ‘achieved’ and ‘achievable’ in accord with common sense and the reasonable meaning of the statute.” *Sierra Club v. EPA*, 479 F.3d 875, 884-85 (D.C. Cir. 2007) (Williams, J., concurring).

Without subcategorization for limited use boilers, these infrequently operated units will need to comply with the same emission limits set by units that operate on a continuous bases. As noted above, “combustion units operate most efficiently when operated at or near their design capacity. The combustion efficiency tends to decrease as the unit’s load (steam production) decreases.” National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 75 Fed. Reg. at 32023. Limited use boilers will therefore be operating for a significantly greater percentage of their time during periods of inefficient operation.

While EPA has already attempted to address this problem through the current MACT floor analysis by addressing the reduced efficiency of load-following units through allowances for variability,¹³ this problem is further amplified for limited use boilers, which EPA did not address in its MACT floor analysis, due to EPA’s decision to include periods of startup and shutdown in determining compliance with MACT. As found by EPA, this was justified because “the standards that we are proposing are daily or monthly averages. Continuous emission monitoring data obtained from best performing units, and used in establishing the standards, include periods of startup and shutdown. Boilers, especially solid fuel-fired boilers, do not normally startup and shutdown more the [sic] once per day. Thus, we are not establishing a separate emission standard for these periods because startup and shutdown are part of their routine operations and, therefore, are already addressed by the standards.” *Id.* at 32013.¹⁴ Moreover, EPA found that “[p]eriods of startup, normal operations, and shutdown are all predictable and routine aspects of a source’s operation.” *Id.* Neither of these findings reasonably applies to emergency or backup boilers. First, as discussed above, emergency and backup boilers cannot practically make measurements over a monthly average given their limited utilization. Second, emergency and backup uses are by definition neither predictable nor routine.

¹³ See MACT Floor Analysis (2010) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source at 9-10 (April 2010).

¹⁴ Continuous emission monitoring data is not available for all pollutants in the database. To the extent that emission limits are based on stack test data that does not consider SSM events, emission information based on an operator’s knowledge and engineering calculations can be used to incorporate SSM variability into the MACT Floor analysis.

By their very nature, emergency and backup boilers must spend a larger percentage of time in startup, shutdown, or other reduced-efficiency operating conditions than either base-loaded or load-following units. EPA should not require limited use boilers to comply with standards set by the best operated of these more efficient units.

- d. The limited use subcategory should be based on a capacity utilization of 10%

For CI RICE, “[t]here is no time limit on the use of emergency stationary engines in emergency situations.” *Id.* at 9654. This is a reasonable provision, since an emergency RICE must continue to operate as long as an emergency persists. This provision should similarly apply to limited use boilers. In addition, however, EPA recognized in the final CI RICE MACT rule that these units also need to operate in other, non-emergency situations, including for maintenance and participation in demand response programs. As a result, EPA allocated time within each operating year (100 hours) for emergency CI RICE to operate in non-emergency situations for what EPA referred to as “maintenance checks and readiness testing.” *Id.* at 9654. In addition, EPA allocated 50 hours of each unit’s maintenance and readiness time for other non-emergency uses, including at least 35 hours for non-financial uses and up to 15 hours for participation in emergency demand response programs, where the unit would be needed to provide power to a “regional transmission organization or equivalent balancing authority” and the “transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout.” *Id.* Examples of such conditions were also provided by EPA, including “unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level.” *Id.*

Given the importance of demand response programs to averting blackouts and other emergencies, the State of Ohio recently went even further, expanding the definition of “emergency” in its permit-by-rule exemptions from MACT for emergency generators less than 50 horsepower to include:

Conditions where a regional transmission organization notifies electric distributors that an emergency exists or may occur and it is necessary to implement emergency procedures for voluntary load curtailments by customers within Ohio, in response to unusually low frequency, equipment overload, capacity or energy deficiency, unacceptable voltage levels, or other emergency conditions leading to a potential electrical blackout. . . .

Proposed Amendment to OAC 3745-31-03 (June 7, 2010); Executive Order 2010-07S (June 7, 2010) (adopting proposed amendment). As stated by Governor Strickland, “[i]n the event of an electrical grid failure that could result in widespread electrical blackouts, Emergency Load Response Programs allow emergency generator operators to temporarily utilize their generators without the need to obtain a permit to help prevent those blackouts. Allowing the use of emergency generators in such circumstances protects public health and welfare.” Executive Order 2010-07S at ¶4. Further, Ohio has exempted all emergency electrical generators operating less than 500 hours per rolling 12-month period from obtaining a permit to install. See Proposed Amendment to OAC 3745-31-03.

For these same reasons, EPA should consider both the necessity of maintenance and readiness testing, as well as participation in emergency demand response programs and other “non-emergency” uses in setting the parameters for a limited use subcategory. While limits based on hours of operation like those used in the CI RICE MACT are one option, another and

potentially easier standard to administer would be to rely on capacity utilization. Boilers, unlike RICE, cannot start up or shut down quickly, making it difficult for boiler operators to run a boiler for only a set number of hours. An hours-of-operation limit, therefore, would be less practical than a limit based on capacity utilization. Moreover, as EPA noted in the Proposed Rule, some emissions from boilers are not dependent on operating parameters such as hours operated, but rather on the fuel consumed. See National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. at 32017 (discussing fuel-dependent HAP). A capacity utilization factor of 10% was chosen for the previous Boiler MACT final rule as the best means of defining a limited use unit. See National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 69 Fed. Reg. at 55223. This definition is equally appropriate for the current rule.

- e. The MACT floor for limited use boilers should be maintenance work practices because emission limitations are infeasible

As stated in the Clean Air Act, “if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard for control of a hazardous air pollutant or pollutants, the Administrator may, in lieu thereof, promulgate a design, equipment, work practice, or operational standard, or combination thereof, which in the Administrator’s judgment is consistent with the provisions of subsection(d) or (f) of this section. 42 U.S.C. § 7412(h). While the D.C. Circuit Court of Appeals has ruled that EPA cannot set floors of “no control,” the court also affirmed EPA’s authority under CAA § 112(h) to use work-practice standards instead of emission floors where “measuring emission levels is technologically or economically impracticable.” *Sierra Club v. EPA*, 479 F. 3d 875, 884 (D.C. Cir. 2007). Given the limited and sporadic operation of emergency and backup boilers, as well as the technical infeasibility of imposing emission limitations on these units, the limited use subcategory should be limited by work practices in lieu of an emission floor.

In the recently promulgated CI RICE MACT, EPA set work practices including regularly scheduled maintenance and the cataloging of hours of operation to ensure compliance with relevant emission limits for emergency use engines. See National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. at 9655-56. As stated by EPA, “EPA believes that work practices are appropriate and justified for this group of stationary engines because the application of measurement methodology is not practicable due to technological and economic limitations.” *Id.* at 9556. As further stated by EPA:

[U]sing these procedures would increase the required number of hours of operation of the engine beyond the routinely scheduled reliability testing and maintenance operation, thereby increasing emissions. While emergency engines have periods of operation for scheduled maintenance and reliability testing, those periods are usually several hours shorter than the number of hours that would be required to run the necessary emissions tests under subpart ZZZZ.

Id. at 9661. Similarly, as stated in the memorandum entitled Existing Stationary Non-Emergency CI RICE Less Than 100 HP and Existing Stationary Emergency CI RICE Located at Major Sources and GACT for Existing Stationary CI RICE Located at Area Sources (February 15, 2010) cited in EPA’s final rule:

For existing stationary CI emergency engines located at major sources, EPA determined it is not feasible to prescribe or enforce an emission standard

because the application of measurement methodology to this class of engine is impracticable due to the technological and economic limitations. Emergency engines typically only operate during emergencies or during periods of routine testing and maintenance. EPA determined that application of the emissions measurement methodologies during either of these periods is not practicable. It is impracticable to test emissions from stationary CI emergency engines during periods of routine testing and maintenance using the test procedures specified in the rule because it would increase the required number of hours of operation of the engine beyond the routinely scheduled reliability testing and maintenance operation, thereby increasing emissions. While emergency engines have periods of operation for scheduled maintenance and reliability testing, those periods are usually several hours shorter than the number of hours that would be required to run the necessary emissions tests under subpart ZZZZ.

EPA also excluded black start units from HAP emission regulations in the CI RICE MACT rule. While these units operate whenever a turbine generator starts, and therefore are not limited to emergency operations, EPA nonetheless recognized the importance of exempting these units from numeric HAP standards, finding that “the short time of operation for these engines (10–15 minutes per start) makes application of measurement methodology for these engines using the required procedures, which require continuous hours of operation, impracticable. Requiring numerical emission standards for these engines would actually require substantially longer operation than would occur normally in use, leading to greater emissions and greater costs.” National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. at 9662.

It is worth noting that these exceptions were not created because the emissions generated have no impact on the environment. As EPA found, “[t]he majority of stationary CI engines are used for emergency purposes. EPA has estimated that 80 percent of stationary CI engines are emergency engines and EPA has taken steps in the final rule to reduce the burden on owners and operators of these engines.” National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. at 9658. Rather, the basis for promulgating work practices in lieu of emission standards is the impracticality of prescribing or enforcing an emission standard. See 42 U.S.C. § 7412(h).

Emergency and backup boilers, like emergency and black start CI RICE, are operated for only short periods of time and cannot feasibly be tested pursuant to EPA standards. Work practices should therefore also serve in lieu of emission monitoring and control technology for emergency and backup boilers. For example, under 40 C.F.R. § 63.7545(d) of the Proposed Rule, a Notification of Intent must be submitted at least 30 days before any performance test. See National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 75 Fed. Reg. at 32006. As a result, even if a limited use boiler were operated for an entire month after an unplanned start, there would be no time to conduct the necessary performance tests. In addition, most test methods require steady state conditions that may not be achieved during limited use operations and, once a steady state has been reached, would require the boiler to continue operating at steady state for enough time to conduct the three 4-hour test runs required by the proposed rule for most compliance tests. See Proposed 40 CFR 63.7520(d).¹⁵ Similarly, EPA is proposing that

¹⁵ Even during regular operation, a limited use boiler would still need to operate for at least 12 hours in steady state condition in order to accommodate the variability attendant in these performance tests. See National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and

boilers and process heaters with heat input capacities greater or equal to 100 MMBtu/hr “demonstrate that average CO emissions, on a 30-day rolling average, are at or below the proposed CO limit.” National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 75 Fed. Reg. at 32034. This averaging period is essential to accommodating expected data variability, including SSM events. See, e.g. National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 69 Fed. Reg. at 5521. See Response to Public Comments on Proposed Industrial, Commercial, and Institutional Boilers and Process Heaters NESHAP at 102 (rejecting a 24-hour averaging period because a 30-day rolling average “accounts for the variability in fuel characteristics (e.g., moisture, Btu content, mixture) that occur for solid fuel-fired boilers and process heaters”). Without the ability to test for 30 continuous days or thereabouts, a limited use boiler could not reasonably be expected to meet the same emission limits due to their reduced ability to accommodate data variability and operators cannot adequately determine compliance with numeric emission limits.

The result would be a marked inability to practically measure emissions without operating these units for significant periods of time for the sole purpose of conducting emissions testing. As with the recently regulated emergency CI RICE, this would result in a new increase in emissions through the very effort to control emissions from these units. See National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. at 9655-56. Work practices are therefore the most feasible control for limited use boilers and should be adopted in the new rule.

f. Limited use waste heat boiler

Manufacturers request, consistent with the above discussion, that EPA require work practices for limited use waste heat boilers. Waste heat boilers use heat extracted from other industrial processes and combust fuel only for a very small duration on an annual basis. For the vast majority of the time, waste heat boilers do not burn alternative fuel at all. For waste heat boilers that primarily use waste heat for their total annual operation, the performance testing requirement (§63.7510 and §63.7520) is unreasonably costly and burdensome. Therefore, the final rule should not require performance testing requirements for limited use boilers that combust liquid fuel less than 10% of the time on an annual basis. The application of work practice standards, is more reasonable and appropriate.

2. Light liquids and heavy liquids subcategories

EPA should subcategorize the proposed liquids subcategory into light liquids and heavy liquids and apply work practice requirements to the clean-burning light liquids subcategory. It is unfair to have distillate units set the floor for heavy oil units. Oil is an expensive fuel compared to gas or coal, and oil is usually only used because gas is not available. For remote locations without access to natural gas (such as islands and Alaska), EPA should only require a work practice for oil units, as EPA proposed for gas-1 for the same reasons EPA cited there. In the Turbine NSPS rule EPA provided some relief for remote locations. For the heavy oil subcategory, only a PM limit is warranted beyond a work practice.

Institutional Boilers and Process Heaters, 75 Fed. Reg. at 32033 (stating that EPA selected a 12 hour averaging period for demonstrating continuous compliance “to reflect operating conditions during the performance test to ensure the control system is continuously operating at the same or better level as during a performance test demonstrating compliance with the emission limits”).

3. Combination boiler subcategory

Within certain industry sectors, boilers are commonly used that co-fire coal in an amount greater than 10% heat input basis with at least 10% biomass. These “combination boilers” that simultaneously burn coal and biomass have different emission profiles than units that burn coal or units that burn biomass. As a result, combination boilers do not fit cleanly into either the coal-fired boiler subcategory or the biomass-fired boiler subcategory. To better accommodate the actual performance of combination boilers, we recommend that EPA adjust the proposed subcategory for combination boilers so that they belong to the coal subcategory for purposes of regulating the fuel-based HAP (i.e., metals/PM, HAP acid gases, and mercury) and the biomass subcategory for purposes of regulating the combustion-based HAP (i.e., CO (as a surrogate for organic HAPs) and dioxins/furans).

As the rule is currently proposed, boilers that burn more than 10% coal with biomass will be classified in the coal subcategory; however, most such boilers will not be able to meet the coal subcategory CO emission standard for organic HAPs due to the substantial amount of biomass that they burn. Biomass fuels are more variable than coal and typically contain significantly more moisture than coal. As a result, it frequently is more difficult to control combustion conditions in combination boilers than in boilers combusting only coal, which means that CO emissions from combination boilers often will be unavoidably greater than from a comparable coal-fired boiler. This makes the coal subcategory an inappropriate choice for establishing standards for combustion-based HAP. Regulating combustion-based HAP from combination boilers under the biomass subcategory makes more sense because combination boilers will perform more like biomass-fired boilers with regard to the combustion related HAPs.

On the other hand, biomass typically has lower levels of metals, halogens, and mercury than coal. As a result, regulating the fuel-related HAPs from combination boilers under the biomass subcategory would be inappropriate because the amount of co-fired coal would in many cases prevent combination boilers from meeting the standards for fuel-based HAPs. For this reason, it makes more sense to regulate fuel-based HAP emissions from combination boilers under the coal subcategory. Notably, if owners or operators of combination boilers anticipate difficulty complying with the proposed CO standard, they may have to switch away from biomass and burn more coal to be able to comply with the coal subcategory emission standards. This unintended consequence of replacing biomass with coal is contrary to national energy and climate policy, which encourages the use of more renewable biomass fuel.

VII. EPA should extend the compliance deadline given the breadth of sources and competition for resources

EPA proposes to set the compliance deadline for existing affected sources at three years after the date of publication of the Final Rule in the Federal Register. It will be extraordinarily difficult – if not impossible – for all of the entities with existing boilers to make the changes necessary to comply with this rule in the three year timeframe that EPA proposes. Put simply, the normally herculean task of performing a boiler retrofit in three years will be made impossible by the enormous competition for critical resources and the likely gridlock in many state permitting processes that the broad application of this rule will create. Many boiler owners will be simply unable to secure equipment and assistance and/or to obtain the state/local permits needed to retrofit their units within three years.

Even under the best of circumstances, a major retrofit of a boiler takes years from project start to finish. EPA has estimated that the installation of an activated carbon injection

control system on one combustion unit – a comparatively simple installation – takes about 15 months.¹⁶ However, EPA expects a range of control devices will be used to meet the standards, including fabric filters, carbon bed adsorbers, activated carbon injection, electrostatic precipitators, wet scrubbers, replacement burners, and combustion controls.¹⁷ Further, the sheer number of boilers impacted by the rule will make finding – and then scheduling – the design and construction resources almost impossible. EPA estimates that there are approximately 13,555 units located at 1,608 facilities covered by this rule. 75 Fed. Reg. 32048. Given that EPA has set emissions standards that no existing unit can meet, every single existing unit subject to an emission standard may need to be retrofitted. Boiler owners will need to hire consultants to assist them in designing and performing the retrofit. Thus, across the multitude of industries impacted by this rule, boiler owners will be competing for qualified consultants to design, permit and perform the retrofits necessary to make boilers compliant with this stringent rule. There are only a limited handful of consulting companies with the expertise to assist in such retrofits, and they will likely be unable to assist all of the boiler owners in less than three years. There will be a similar scarcity in equipment vendors, construction contractors, construction equipment (e.g, heavy lifting cranes), skilled labor (e.g., boilermakers), and other critical suppliers. Companies may even be unable to secure the basic building materials and control equipment (e.g., baghouses and scrubbers).

In order to retrofit a boiler, the owner will need to line up the capital necessary to pay for the retrofit. In these difficult economic times, just securing the necessary capital may take months, if not years. In addition, the owner will need to go through the relevant permitting process(es), which will similarly take months, if not years. Finally, once the finances are secure and the permitting is complete, the owner will actually need to perform the retrofit. The design, procurement, installation, and shakedown of a retrofit project (e.g., installing a scrubber on a large boiler) can easily take more than three years.

In addition, the timing of the retrofit work needs to be carefully planned, particularly for boilers that provide the primary and/or base load energy supply for their facilities. A facility owner will only shut down a boiler when everything is properly staged to ensure minimal disruption of the facility's operation. In addition to ensuring that the design work is completed and the control equipment and other supplies are on-site and ready for installation, the facility owner needs to make sure that the full suite of consultants and laborers are available for the installation. Based on a discussions with a number of potentially affected companies, the turnaround or shutdown cycles for boilers at many of the facilities is so long as to make this type of precise staging exceedingly difficult to do in a three year period without substantial business interruption.

Finally, in many instances, the installation of pollution control equipment and associated charges to boiler must be permitted under state air pollution statutes and/or construction codes (building permits, etc.). The proposed rule will result in an increase in the number of permit applications, potentially swamping the state and local agencies. Even in those areas where the

¹⁶ EPA, *Engineering and Economic Factors Affecting the Installation of Control Technologies for Multipollutant Strategies* (2002).

¹⁷ EPA, *Regulatory Impact Analysis: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters*, 3-1 (April 2010) (“The control analysis considered fabric filters, carbon bed adsorbers, and activated carbon injection to be the primary control devices for mercury control, electrostatic precipitators for units meeting mercury limits but requiring additional control to meet the PM limits, wet scrubbers to meet the HCl limits, tune-ups, replacement burners, and combustion controls for CO and organic HAP control, and carbon injection for dioxin/furan control.”)

rule may not result in significant increases in permitting work, the normal delays associated with permitting may make meeting the three year compliance deadline impossible.

In light of the difficulty in meeting a three year compliance deadline, EPA and authorized states should be prepared to readily grant one-year extensions under CAA § 112(i)(3)(B) to those units that have problems installing the necessary control equipment to comply with the industrial Boiler MACT rule.

In addition, EPA should establish an extended two-step compliance period for situations where a boiler owner voluntarily elects to replace or retrofit a boiler to burn a cleaner fuel source.¹⁸ If a facility decides to switch to a cleaner fuel, the replacement or retrofit work required to make that switch will potentially take years, for all of the reasons discussed above. Rather than require the facility to add emissions controls to its existing boiler in time for the proposed three year compliance deadline – likely eliminating the possibility that the facility would switch to a cleaner fuel source – EPA should allow six years total for facilities to change their boilers and meet the MACT requirements for the cleaner fuel source. This six year period would occur in two steps; a no-backsliding provision would apply for three years from publication of the rule in the Federal Register, and then the facility would have three years to comply with MACT standard for the subcategory for the cleaner fuel subcategory. EPA promulgated exactly this type of extended MACT compliance deadline for certain facilities that voluntarily elected to install new technology as part of the Pulp and Paper Cluster Rule. See Pulp and Paper Cluster Rule, 60 Fed. Reg. 18503, 18,508 (Apr. 15, 1998).¹⁹ In addition to providing an incentive for facilities to switch to cleaner fuel sources, this approach would reduce some of the competition for resources discussed above by extending the deadline to complete the work to replace or retrofit certain boilers.

VIII. The proposed “energy assessment” is flawed and exceeds EPA’s statutory authority

A. *EPA has exceeded its statutory authority by requiring energy assessments of entire facilities, as section 112 is focused only on sources*

EPA has proposed, as a “beyond the floor” measure, to require an owner or operator of a boiler to conduct an energy assessment/audit of the entire facility where the boiler is located. This requirement overreaches EPA’s statutory mandate to regulate “sources” pursuant to Section 112 of the Clean Air Act.

Section 112(d) of the Clean Air Act is focused entirely on regulation of “sources,” not on “facilities.” It requires EPA to set emissions standards that are “applicable to new or existing sources” § 112(d)(2). Thus, it reaches no further than the specific “sources.” The “sources” at issue in this rulemaking are existing, new and reconstructed boilers and process heaters. See

¹⁸ EPA recognizes the MACT rule should be crafted to encourage the use of cleaner fuels, such as natural gas. 75 Fed. Reg. 32025.

¹⁹ This two-step approach for the MACT standard is consistent with the D.C. Circuit’s decision in NRDC v. EPA, 89 F.3d 1364 (D.C. Cir. 2007) (finding invalid EPA’s decision to extend the compliance deadline for a promulgated MACT rule by a year because of the substantial changes that the agency made to the rule). Rather than functioning as an extension of the compliance deadline, this MACT standard for certain facilities would become applicable in two steps. For the first three years, a no-backsliding MACT standard would be applicable, then the three year deadline to implement the MACT standard for the applicable “cleaner” source would begin to run.

75 Fed. Reg. 32049, 32063-64 (Proposed § 63.7490 and § 63.7575).²⁰ The “affected source” regulated by this NESHAP is the specified emission unit – boilers and process heaters – not the entire plant which includes the location of the emission unit. A major source is a “stationary source...that emits or has the potential to emit” some threshold amount of HAP, and area sources are “any stationary source of [HAP] that is not a major source.” 42 U.S.C. § 7412(a)(1) and (2). A stationary source is any “building, structure, facility, or installation that emits or may emit any air pollutant.” 42 U.S.C. § 7412(d) 42 U.S.C. § 7411(a)(3). This is consistent with the long-established understanding of the term “affected source” as it relates to the “major source” where the affected source is located. See preamble to rule establishing the General Provisions for all NESHAPs, 59 Fed. Reg. 12,408, 12,412-13 (1994)

Limiting the regulation to the affected source is also consistent with Congress’s general statutory scheme, under which EPA is to publish a list of “all categories and subcategories of major sources and area sources” of the listed HAP. §112(c)(1). EPA’s published list of source categories groups every conceivable type of industrial process and process unit into a category, each of which is regulated by its own NESHAP, each published as a separate Subpart to 40 C.F.R. Part 63. Therefore, any § 112 source other than the boiler and process heater affected units for this NESHAP would be covered separately by another NESHAP. The statutory scheme does not assign duplicative source category regulations for the same unit.

By its own terms, the proposed rule provision for the energy assessment will reach far beyond the regulated source (boilers or process heaters) to impact the entire facility. The proposed regulation defines an “energy assessment” to be “an in-depth energy study identifying all energy conservation measures appropriate for a facility given its operating parameters. 75 Fed. Reg. 32064 (proposed § 63.7575) (emphasis added). Further, the energy assessment extends far beyond boilers or process heaters to the entire facility, by requiring a site to, *inter alia*:

- (2) Establish operating characteristics of the facility, energy system specifications, operating and maintenance procedures, and unusual operating constraints,
- (3) Identify major energy consuming systems,
- (4) Review available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,
- (5) Identify a list of major energy conservation measures,

Id. at 32014. EPA also states that the assessment must be made on the “boiler system,” which EPA defines as “the boiler and associated components, such as, the feedwater system, the combustion air system, the fuel system (including burners), blowdown system, combustion

²⁰ In this rule, EPA defines each of these sources. An industrial boiler is “a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.” A commercial/institutional boiler is “a boiler used in commercial establishments or institutional establishments such as medical centers, research centers, institutions of higher education, hotels, and laundries to provide electricity, steam, and/or hot water.” A process heater is “an enclosed device using controlled flame, that is not a boiler, and the unit’s primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not directly come into contact with process materials.” 75 Fed. Reg. 32063 - 65.

control system, and energy consuming systems.” 75 Fed. Reg. 32063. Assuming *arguendo* that an energy assessment is properly an emission standard under section 112, it is an emission standard that is applicable to the entire facility, not just a source within a facility. Congress clearly did not intend for the Clean Air Act MACT regulations focused on clearly delineated “sources” to dictate measures regarding and changes to the operation of machinery and processes throughout an entire facility.

B. *EPA has exceeded its statutory authority, as an energy assessment is not an “emission standard... applicable to ... [a] source”*

Section 112 requires EPA to establish “*emission standards*” for each listed source category and subcategory. §112(c)(2); 42 U.S.C. § 7412(c)(2). By definition, the identification of energy saving measures is not an emission standard. In addition, were the efficiency measures actually to be undertaken, reduced demand for the output of a regulated source is not an “emission control” technology to limit emissions from the regulated source. §112(c)(2); 42 U.S.C. § 7412(d)(3) If this were so, the text of §112 would provide no limiting principle for EPA’s authority.

EPA finds justification for the energy assessment by defining it as a beyond-the-floor control technology in CAA section 112(d)(2):

Emission standards promulgated...and applicable to new or existing sources...is achievable...through application of measures, processes, methods, systems or techniques including but not limited to measures which...reduce the volume of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications.

75 Fed. Reg. 32,026 (citing 42 U.S.C. 7412(d)(2)). EPA posits that “process changes, substitution of materials or other modifications” encompasses “energy assessments.”

EPA’s reliance on that statutory language is misplaced, as when the statute refers to “process changes, substitution of materials or other modifications” it can only be referring to the specific source. In language that EPA omitted from the preamble’s justification, the statute makes clear that the beyond the floor emissions standards are ones that “applicable to new or existing sources” and are “achievable for new or existing sources in the category or subcategory to which such emission standard applies.” 42 U.S.C. 7412(d)(2). Thus, EPA’s statutory authority is only to mandate emission standards that are “process changes, substitution of materials or other modifications” to the source itself, not to all of the energy using components of an entire facility.

EPA has developed MACT standards that permit sources to elect to comply with pollution prevention alternatives in lieu of standards for some units and under certain circumstances. See, e.g., Pharmaceuticals Production MACT, 40 C.F.R. Part 63, Subpart GGG; *National Emission Standards for Hazardous Air Pollutants for Source Categories: Pharmaceuticals Production; Final Rule*, 63 Fed. Reg. 50280 (Sept. 21, 1998)(Pharma MACT). These do not, however, establish analogous precedent for the action EPA proposes in this MACT. The provisions of the Pharma MACT, for example, are a *compliance alternative* to compliance with the MACT standard. Here, EPA defines this as a beyond the floor MACT standard, making it not only mandatory, but also conveying the notion that sources can and must achieve by its greater stringency than the floor, greater emission reductions. In addition, the Pharma compliance alternative relates directly to the reduction of the regulated pollutants

from the same four regulated source types as those regulated by the MACT standard. Here, no such direct correlation can be made, and the assessment covers unregulated, non-emitting elements of the company's operation beyond the regulated boiler and process heater.

EPA must limit regulatory requirements to methods that will reduce HAP emissions by the regulated combustion unit itself and not to other systems, energy using systems or process areas. EPA goes beyond its authority by imposing requirements beyond the combustion unit, even covering systems not directly associated with combustion units.

C. *The assessment is arbitrary because it lacks a relationship to HAP reduction, and EPA provides no record basis demonstrating such a relationship*

EPA states that “[t]he purpose of an energy assessment is to identify energy conservation measures (such as, process changes or other modifications to the facility”) that can be implemented to reduce the facility energy demand which would result in reduced fuel use. Reduced fuel use will result in a corresponding reduction in HAP, and non-HAP emissions.” 75 Fed. Reg. 32,026. The problem with this assertion is that in many cases it is simply not true.

The simple comparison of two boilers – one using coal and one co-firing coal and bark – demonstrates EPA's misdirection on this issue. In this example, an energy efficiency audit would show that a boiler using only coal is more efficient than a boiler using bark and coal. However, a boiler using only coal would have increased emissions.

Reduced energy does not necessarily mean reduced pollutant emissions, even if it means reduced HAP emissions from the boiler. To offer but one specific countervailing example: periodic operation of solid fuel boilers in a highly turned down mode is common among many industrial sectors, as an efficient way to manage manufacturing process energy needs. For example, industrial process boilers in the wood products industry supply steam according to the immediate demand from processes for which they are operated. These boilers operate at widely varying load levels, depending on, among other things, the amount of steam the process equipment is demanding at the time. During high turndown periods the actual HAP emission load should be lower since the total fuel load is reduced from the normal operation. Conversely, however, high CO emissions are a common occurrence to all solid fuel boilers during high turndown operation due to a combination of well-known combustion fundamentals. It is impossible to avoid these countervailing effects. EPA has recognized boiler, or burner, turndown ratio as a factor affecting performance in several contexts. See, EPA, Final Technical Support Document for HWC MACT Standards, Vol. IV, p. 3.6 (July 1999); EPA Region 6 Center for Combustion Science and Engineering, Hazardous Waste Combustion Unit Permitting Manual, Component 1 How to Review a Test Burn Plan, p. D-5.5 (Tetra Tech Jan. 1998).

In addition to a turndown resulting in increased non-HAP emissions from the boiler, in other scenarios, reduced energy could result in increased HAP emissions from other non-combustion processes. In fact, in this proposal, EPA acknowledges that categorical assertions regarding energy-pollutant emissions relationships are not accurate, when it notes that “[i]mprovement in energy efficiency results in decreased fuel use which results in a corresponding decrease in missions (both HAP and non-HAP) from the combustion unit, *but not necessarily a decrease in emissions of all HAP emitted.*” 75 Fed. Reg. 32,026.

EPA does not and cannot demonstrate that *conducting* an energy assessment will actually reduce HAP emissions. Similarly, EPA does not and cannot demonstrate that even

implementing the findings of an energy assessment, assuming EPA were to require implementation (which it does not have the authority to do), will reduce HAP reductions. EPA admits as much in the proposal, offering unsubstantiated projections of possible reductions as support:

If a facility implemented the cost-effective energy conservation measures identified in the energy assessment, it would potentially result in greater HAP reduction than achieved by a boiler tune-up alone and potentially reducing HAP emissions (HCl, mercury, non-mercury metals, and VOC) by an additional 820 to 1,640- tons per year.

75 Fed. Reg. at 32,026 (emphasis added).

Notwithstanding no demonstrated correlation between yet-unidentified energy saving measures and projected possible HAP reduction, and no proposal to require their implementation, EPA offers this flawed syllogism: an energy assessment identifies ways to reduce fuel use; reduced fuel use will reduce pollutant emissions; therefore an energy assessment will reduce HAP emissions consistent with 112(d)(2). 75 Fed. Reg. 32026. The proposal irrationally concludes that an energy assessment will contribute to achieving the maximum HAP emission reduction. 75 Fed. Reg. 32026. In fact, an unimplemented energy assessment will not reduce fuel use, will not reduce HAP emissions, and even if implemented, will not reduce HAP emissions consistent with 112(d)(2).

D. *Any possible energy and cost savings from the energy assessment cannot be projected reliably and the proposed rule irrationally presumes such savings*

EPA presumes HAP reductions and energy and energy-related cost savings from implemented energy assessments 75 Fed. Reg. 32026 (estimating HAP reductions of 820 – 1640 tons per year). Each of these presumptions is unreliable, due principally to the diversity and complexity of the source category. As described above, at some facilities, reduced fuel consumption could result in increased emissions to the facility, rendering the measures inconsistent with §112(d)(2). Alternatively, undertaking measures to reduce fuel consumption could require more costly measures to counterbalance the effect of the reduced fuel consumption, rendering the measures not cost-effective. What is clear, however, is that EPA cannot possibly project with any accuracy the ability of sources in this category to cost-effectively undertake energy efficiency measures, much less their emission impacts, cost, or other factors that the CAA requires be included in that analysis. The complete absence of data makes any such presumptions irrational.

EPA makes an unsupported assertion that “the costs of any energy conservation improvement will be offset by the cost savings in lower fuel costs.” 75 Fed. Reg. at 32,026. EPA to some extent assures that this assumption will be true by defining a “cost-effective energy conservation measure” as one that has a payback period of two years or less. *Id.* Yet this is an artificial criterion applied with no basis or support to EPA’s conclusion that the benefits of the program outweigh the costs. There is not in the record any substantiation of this point. Project justification criteria vary significantly by company, facility, product and even time of year. EPA’s conclusory analysis of the cost-benefit analysis vastly oversimplifies capital expenditure decisions and artificially limits the calculus to fit the need to justify the beyond-the-floor standard. Nowhere, however, does EPA explain what provision in §112(d) or elsewhere in the CAA grants EPA the authority to mandate investment criteria for projects implemented pursuant to the energy assessments.

Even regarding the presumption of emission reductions itself, the proposal is very inconsistent. In some sections, the proposal accurately points out that if efficiency measures are implemented, fuel use is reduced, HAP emissions may be reduced and energy-related savings are realized. 75 Fed. Reg. at 32,026. Yet, in other sections, the proposal inaccurately asserts that the energy assessment in-and-of-itself will lead to emission reductions. 75 Fed. Reg. at 32,026.

E. *EPA lacks authority under the Clean Air Act to compel regulated facilities to implement any measures that may be identified in an energy assessment*

EPA is considering whether to require the implementation of energy saving measures and seeks comment on whether that would be “economically feasible.” 75 Fed. Reg. at 32,026. EPA needn’t determine the economic feasibility of their implementation, because in any event, EPA has no authority to compel sources to implement the findings.

No provision of the CAA provides EPA with the free-ranging authority to compel energy efficiency reductions at a regulated source. As discussed above, EPA has no authority to use this rule to regulate processes and equipment beyond the “source.” Further, it is quite possible that an energy efficiency measure, if implemented, would constitute a “modification” that would trigger other provisions of the Clean Air Act such as PSD or new-source status under NSPS. This is probably likely, given that the assessment is intended to identify “major” energy conservation measures. 75 Fed. Reg. 32014. If indeed major measures are identified, then a fortiori EPA lacks authority to compel their implementation, where that would effectively require additional permitting measures unrelated to the MACT implementation. EPA likewise lacks authority to compel reduced fuel use to reduce HAP emissions from the boiler, where that would cause increased HAP or non-HAP emissions from systems affiliated with or served by the regulated boiler. In instances where energy consumption adjustments could cause adverse consequences at the source, such as, for example, exceeding allowable emission limits or consuming an unacceptable amount of the compliance margin for a particular pollutant, EPA lacks the authority to compel a source to undertake such measures.

F. *The energy assessment will require sources to submit data that in many cases constitutes confidential business information*

A requirement that an energy assessment be conducted for energy systems served by all combustion units that are affected sources would require evaluation of confidential processes and systems. Since these evaluations and resulting information do not reflect the control of HAP emissions, EPA has no authority to require that sources provide this information. Even if EPA were to expressly indicate that such data provided does not constitute emissions data, and may therefore be protected from dissemination as confidential business information, this approach still does not resolve EPA’s lack of authority to compel its submission in the first instance. In addition, CBI protections are not absolutely protective of sensitive data, as they are discretionary and always subject to evaluation and reevaluation by EPA.

Although current CAA CBI regulations permit a source to designate information provided to EPA as CBI, the type of information EPA proposes to compel companies to report here is, by legal definition, CBI. 40 C.F.R. § 2.301(e) (allowing information to be designated as trade secret, proprietary or company confidential). Therefore, EPA should not permit competitors to force reporting entities to defend the nature of this data in an agency CBI proceeding. Whether such information constitutes CBI should not be assessed on a case-by-case basis. Instead, it

should be given categorical protection because the entire class of information EPA is seeking here constitutes CBI, it is not emissions data and its collection is outside EPA's § 112 authority.

G. *If EPA decides to require an energy assessment, several features should be amended, and cost and other beyond-the-floor impacts should be analyzed. This will require notice and comment.*

1. The assessment should be expressly limited to HAP reductions at the affected industrial, commercial or institutional boiler or process heater, consistent with § 112

As discussed above, EPA has no statutory authority to use this rule to regulate processes or equipment outside the "source." Thus, any requirement for an energy assessment should be limited to the affected industrial, commercial or institutional boiler or process heater.

2. EPA must also consider impacts of the assessment, including cost and whether boiler-related HAP reductions may be offset by HAP and other pollutant increases, or other energy-consumptive measures that could occur at the facility associated with the boiler

For any beyond-the-floor requirement, the CAA requires EPA to analyze cost, non-air quality health and environmental impacts and energy requirements. § 112(d)(2). EPA purports to propose as beyond-the-floor that an energy assessment be undertaken, yet it relies on projected energy and cost benefits from implementation of the assessment. The record lacks any beyond-the-floor analysis of requiring either the assessment or its implementation, without which EPA has no basis to sustain the requirement.

EPA estimates the cost of an energy assessment to be \$2500 - \$55,000, depending on the size of the facility. EPA also notes that 1551 facilities would be required to perform the assessment at an annualized cost of \$26 million. Based on experience with energy assessments, we estimate the cost of an energy assessment at a complex facility with multiple types of combustion equipment and systems could well exceed \$100,000 since multiple types of people would be needed. The need to evaluate economic viability of changes requires engineering and cost estimates of capital expenditures and determination of return on investment or economic payback; the level of engineering assessment typically requires some level of design, thus greatly increasing the cost of the assessments and project viability determination. The EPA estimated cost in no way would cover such a level of detail. Programs developed by DOE have not extended fully throughout facilities or to the level of detail envisioned by EPA, so that comparable costs to DOE programs are not necessarily correct. Therefore, the total cost and burden of the energy assessment requirement as proposed will be significantly higher than estimated by EPA.

3. Adoption of ENERGY STAR should not be required to replace the far more sophisticated, source-specific energy management programs already in place at regulated sources

In many cases facilities and companies have already conducted detailed energy assessments. If any energy assessment requirement is included in the final rule, regulated entities should be allowed to utilize any existing programs or assessments to the extent possible.

4. The assessment should be done by facility or company staff rather than by contractors

The proposal would require sources to hire a “qualified specialist” “who has successfully completed the Department of Energy’s Qualified Specialist Program for all systems or a professional engineer certified as a Certified Energy Manager by the Association of Energy Engineers.” 75 Fed. Reg. 32026. This is an arbitrary requirement that overlooks existing regulated entity resources. Sources have at their disposal the most qualified individuals to assess the energy savings opportunities for the regulated source – those who are most familiar with the processes involved, day-to-day operations, and historic patterns of operation at the site. Sources should not be compelled to contract with outside personnel who are far less knowledgeable about the operations of the site, to assess energy conservation measures that may be undertaken. This requirement would unnecessarily increase costs and burden to the regulated entities.

IX. The controls necessary to meet EPA’s stringent proposed emissions limitations for CO will result in increased energy usage along with increased emissions of other pollutants

EPA’s proposed CO emissions limit arbitrarily and capriciously fails to recognize the dependency between CO and other emissions, which makes this rule impossible to implement in either process heaters or boilers. Requiring such extraordinarily low CO levels will have an adverse impact on other emissions such as NO_x, PM, greenhouse gases (GHG) and even HAPs. Reducing CO to extremely low levels will require increased excess air levels which reduce efficiency, increasing the amount of fuel that must be fired and therefore increasing the total mass of other pollutants (i.e. HAPs, GHGs, NO_x, SO_x, PM, etc.). For example, CO and NO_x emissions are both dependent on the residence times and temperatures of the flue gas in the firebox, but in different ways. For most boilers and process heaters achieving low NO_x emissions, there is insufficient time at temperature to oxidize CO to 1 ppm. As CO decreases, NO_x increases and vice versa, so emissions control in any fired equipment is a trade-off between the two.

In addition, during Start-up, Shutdown, Malfunction (SSM) periods, boilers and process heaters operate under conditions that are likely to generate unavoidable increases in CO emissions. These conditions are driven by safety considerations (e.g., ensuring sufficient air flow to avoid explosive fuel-rich scenarios), operational concerns (e.g., gradually warming up the equipment in order to prevent thermal damage), and warranty requirements (e.g., equipment vendors require gradual warm-up as a warranty condition). Thus, setting the proposed inappropriately low CO emissions limit will encourage quick start-up and shutdown of equipment in order avoid exceedances of limit. EPA should not promulgate a rule that promotes such unsafe and improper operation of boilers and process heaters.

X. EPA’s proposal for addressing startup, shutdown, and malfunction (SSM) emissions violates the statutory requirement that standards be “achievable”

EPA’s approach to addressing startup, shutdown, and malfunction (SSM) periods in the Proposed Boiler MACT is contrary to the statute’s requirement that the standards established under section 112(d) be “achievable.” See 42 U.S.C. § 7412(d)(2). Furthermore, EPA’s claims that the MACT standards reflect startup and shutdown periods are not supported by the record.

To address the decision in *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), *cert. denied*, 2010 U.S. LEXIS 2265(2010), which vacated the exemption in 40 C.F.R. § 63.6(f)(1) and (h)(1) for SSM periods, EPA proposes emissions standards in the MACT for industrial boilers and process heaters that apply at all times, including periods of SSM. EPA claims in the preamble that startup and shutdown periods were taken into consideration when setting the MACT standards. See Proposed Boiler MACT Rule at 32,012-13. According to the preamble, continuous emissions monitoring data from the best performing units, which include startup and shutdown periods, are used to set the floor levels in the proposed rule. See *id.* at 32,013. EPA further notes that startup and shutdown are part of “routine operations” and are therefore “already addressed” in the MACT standards. See *id.*

With regard to malfunctions, however, EPA states that these periods should not be viewed as a “distinct operating mode,” and thus, emissions from these periods do not need to be factored into developing the MACT floor levels. See *id.* Moreover, EPA states that even if malfunctions were to be considered a distinct operating mode, it would be “impracticable to take malfunctions into account in setting CAA section 112(d) standards for major source boilers and process heaters” given that these episodes are by definition sudden and unexpected events which vary in degree, frequency, and duration. *Id.*

When setting standards in the early 1990’s under CAA 112(d), EPA used its New Source Performance Standards (NSPS) program as a model. The section 112 standards were acknowledged by EPA to be “essentially equivalent to [section 111] performance standards” and that “unpredicted and reasonably unavoidable failures of air pollution control systems” would occur. 58 Fed. Reg. 42,760, 42,777 (Aug. 11, 1993). To address this situation, EPA adopted a similar exemption to the one in the NSPS Program for SSM events and imposed a “general duty” to minimize emissions. Thus, EPA acknowledged, as early as 1993, that SSM events are not appropriate for inclusion in a MACT standard and that an alternative approach should be used to address these situations. While the D.C. Circuit has ruled that sources cannot be *exempt* from complying with MACT standards, the court noted that Congress recognized in some instances that it may not be feasible to prescribe or enforce an emission standard under section 112, and so section 112(h) “work practices” or “operational” standards are available in certain limited situations. See *Sierra Club v. EPA*, 551 F.3d at 1028.

The D.C. Circuit also has recognized that standards based on what sources achieve must account for the limitations inherent in the technology used to reduce emissions. For example, in a case reviewing NSPS under section 111 of the CAA, *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 398 (D.C. Cir. 1973), the court acknowledged that “‘startup’ and ‘upset’ conditions due to plant or emission device malfunction, is an inescapable aspect of industrial life and that allowance must be made for such factors in the standards that are promulgated.” *Id.* at 399. Furthermore, in *National Lime Ass’n v. EPA*, 627 F.2d 416 (D.C. Cir. 1980), the court noted that “a uniform standard must be capable of being met under most adverse conditions which can reasonably be expected to recur.” *Id.* at 431 n.46. The D.C. Circuit acknowledged this same principle almost 20 years later when reviewing emission standards for new sources in the medical waste incinerator rule under section 129 in *Sierra Club v. EPA*, 167 F.3d 658 (D.C. Cir. 1999). In that case, while the court did not find the record sufficient to support EPA’s approach for new sources, the D.C. Circuit did not object to a standard-setting approach which would account for the performance of technology under the “worst reasonably foreseeable circumstances.” See *id.* at 665. Furthermore, the D.C. Circuit reiterated the principle in *National Lime* that “where a statute requires that a standard be ‘achievable,’ it must be achievable ‘under the most adverse circumstances which can

reasonably be expected to recur.” *Id.* at 665 (citing *National Lime Ass’n v. EPA*, 627 F.2d 416, 431 n.46 (D.C. Cir. 1980)).

EPA’s MACT floor-setting approach in the Proposed Boiler MACT ignores these longstanding principles and mischaracterizes the role startup and shutdown data plays (or rather, does *not play*, as the case is here) in EPA’s floor-setting process. As noted above, EPA claims that the agency considered startup and shutdown periods when setting the floors because CEMS data, relied on by EPA in “establishing the standards,” included data from those periods. See Proposed Boiler MACT Rule at 32,012. This representation is a serious misstatement of the Agency’s record. EPA does not rely on the CEMs data when setting the floors for boilers and process heaters. To the contrary, as indicated by the ERG memorandum in the docket, EPA uses test run data collected through the ICR phase II testing process, which reflect normal (often steady state) operating conditions, to set the proposed floors. See Memorandum from A. Singelton, ERG, to J. Eddinger, U.S. EPA, *MACT Floor Analysis (2010) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source* at 3 (April 2010). Thus, according to EPA’s own docket materials, the data used to set the proposed floors fail to account for the dynamic conditions and variable emissions occurring during startup and shutdown episodes. Furthermore, as the ERG memorandum makes abundantly clear, EPA’s approach does not make use of the CEMs data (with the startup and shutdown information) in its variability analysis where it would be the most helpful in reflecting real world fluctuations in emissions. *Id.*

Given the absence of startup and shutdown emissions information from the test run data relied on by EPA to set the proposed standards and the difficulty of collecting data from such brief operation periods, it is appropriate for EPA to set work practices for these events for boilers and process heaters. As noted earlier, section 112(h) allows EPA to set work practice standards for situations where “it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard . . .” CAA § 112(h)(1); 42 U.S.C. § 7412(h)(1). Gathering data from startup and shutdown periods would be challenging given the brief nature of these periods as well as the need to define the exact time period for what is considered “startup” and/or “shutdown.” Moreover, the definition of “not feasible to prescribe or enforce an emission standard” is defined in the CAA as any situation where “the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.” CAA § 112(h)(2); 42 U.S.C. § 7412(h)(2). Startup and shutdown episodes fit with this definition and would justify the agency setting work practices to address emissions during these periods. Furthermore, a work practices approach for these periods would be in keeping with the statute’s requirement that MACT standards be “achievable” as well as with the requirement that a MACT standard apply at all times.

A work practices approach for these periods also would be consistent with EPA’s recently promulgated MACT standards for compression ignition reciprocating internal combustion engines (CI-RICE). See *National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, Final Rule*, 75 Fed. Reg. 9648 (Mar. 3, 2010). Based on comments received from stakeholders, EPA finalized work practice standards for startup because the agency determined that it was “not feasible to finalize numerical emission standards that would apply during startup because the application of measurement methodology to this operation is not practicable due to technological and economic limitations.” *Id.* at 9656. According to EPA, applicable test methods that would be needed to measure during these events “do not respond adequately to the relatively short term and highly variable exhaust gas characteristics occurring during these periods.” *Id.* at 9665. Furthermore, EPA determined that the cost for testing all the engines affected by the rule to get the necessary data

could be more than \$1 billion. See *id.* Startup and shutdown periods for boilers present similar levels of testing challenges and costs.

With respect to malfunctions, as noted earlier, EPA argues in the preamble to the Proposed Boiler MACT that these periods should not be considered a “distinct operating mode” and uses this to justify not factoring these emissions into the proposed MACT standards. Considering that EPA’s proposed MACT standards are supposed to apply at all times, the implication is that periods of malfunction also are covered by the MACT standards that apply during normal operations. This directly conflicts with the statutory requirement that the MACT standard be “achievable.”

Given that the floor data does not consider malfunctions and that the statute requires that the MACT standard be “achievable,” EPA should set work practice requirements to address periods of malfunctions as well. As noted above, section 112(h) allows EPA to set work practice standards for situations where “it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard” Similar to startup and shutdown, malfunctions fit with the situations described in the definition of “not feasible to prescribe or enforce an emission standard” as any situation where “the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.” Emission testing for malfunctions would be near impossible to conduct given the sporadic and unpredictable nature of the events. As noted earlier, EPA acknowledges in the preamble to the Proposed Boiler Rule that it is “impracticable” to take periods of malfunctions into account when setting emissions standards given the “myriad different types of malfunctions that can occur across all sources in the category” and that “malfunctions can vary in frequency, degree, and duration, further complicating” the standard setting process. Proposed Boiler MACT Rule at 32,013. Section 112(h) work practice standards, therefore, are well-suited to address malfunction periods and the complexities and challenges surrounding collecting data and establishing numerical standards for those events.

XI. EPA should allow a co-fired unit to opt out of the CISWI rule and into the Boiler MACT Rule if it stops burning solid waste

EPA draws a bright line distinction in its proposed rules between units that burn solid waste, which will be regulated under the CISWI rule, and those that do not, which will be regulated under the Boiler MACT rule. See, e.g., Proposed Boiler MACT Rule Preamble at 29; Proposed CISWI Rule Preamble at 24. But the proposed rules provide little guidance for units capable of burning both solid waste and fuels that would theoretically cause them to be regulated under the Boiler MACT rule. Instead, EPA seeks “comment on whether” a unit that burns solid waste, and is thus subject to regulation under the CISWI rule, “could . . . opt back into regulation under [the Boiler MACT rule] by taking a federally enforceable restriction precluding the future combustion of any solid waste material.” Proposed Boiler MACT Rule Preamble at 29-30. For the reasons discussed below, EPA should allow a co-fired unit to opt out of the CISWI rule and into the Boiler MACT rule if it stops burning solid waste.

Allowing a co-fired unit to opt out of the CISWI rule and into the Boiler MACT rule will provide a beneficial measure of flexibility to operators of such units who, for a variety of reasons, may in the future no longer want to burn solid waste. And, under *National Mining Association v. EPA*, 59 F.3d 1351, 1361-62 (D.C. Cir. 1995), any restrictions that a source takes to ensure that it not combust solid waste need only be practically and legally enforceable (for example, under state or local law), and not necessarily “federally” enforceable. As a policy matter, forcing operators to remain regulated under the CISWI standard should the unit no

longer burn solid waste would needlessly penalize them with little to no benefit gained. Lastly, no law or regulation prevents EPA from allowing a unit to opt out of the CISWI rule and into the Boiler MACT rule.

Indeed, the only basis that might arguably stand in the way of opting out of CISWI and into Boiler MACT is EPA's "once in always in" policy ("OIAI Policy"). Under the OIAI Policy, which was intended to be interim guidance until EPA could undertake rulemaking, if a facility is a major source for hazardous air pollutants ("HAPs") on its first compliance date, it is required to comply permanently with the MACT standard in question.²¹ EPA promulgated the Policy in 1995 for facilities seeking to comply with the then-new MACT standards on the belief that without such a policy, facilities would "backslide" from MACT control levels by (1) installing MACT required controls; (2) arguing that with those controls, the facility was then emitting below major source thresholds, and therefore no longer subject to the MACT standard; and (3) subsequently increasing emissions to major source thresholds or above.

But in practice the OIAI Policy has created an arbitrary distinction between major and area sources based solely on a facility's PTE at its first compliance date. The CAA does not compel this result; indeed, no such temporal limitation exists in the CAA. Further, the temporal distinction serves as a disincentive for sources to reduce HAP emissions beyond the levels required by an applicable MACT standard because the source gains no benefit from doing so (e.g., no reduced monitoring, recordkeeping, or reporting). And because there is no opportunity under the Policy for major sources to become area sources, major sources have no incentive to explore different control techniques or new and emerging technologies that would result in lower emissions. For these reasons, Manufacturers have consistently opposed the OIAI Policy, and EPA should abandon it, which the Agency proposed to do in 2007.²²

Even if EPA does not abandon it, the OIAI Policy should not apply to the CISWI and Boiler MACT rules. By its terms, the Policy applies solely to circumstances where a facility seeks to limit its PTE to below major source thresholds in order to avoid having to comply with major source MACT standards. As such, the guidance was limited and EPA did not intend to apply it on a broader basis. Indeed, EPA confirmed this when it decided not to apply the Policy to sources regulated under the new mandatory Greenhouse Gas ("GHG") reporting rule. See, e.g., Mandatory Reporting of Greenhouse Gases, Final Rule, 74 Fed. Reg. 56260, 56300 (Oct. 30, 2009) (removing an OIAI provision from its proposed reporting rule to provide facilities with a greater incentive to reduce GHG emissions). EPA should do the same here for the CISWI/Boiler MACT rules where there is no concern over "backsliding." And the Policy makes little sense here where a unit, by virtue of its design and the type of fuel available, would have to comply with either the CISWI or the Boiler MACT rule.

XII. EPA is authorized to set GACT standards for POM and Hg

Section 112(c)(6) of the CAA identifies seven specific HAPs and requires EPA to "list categories and subcategories of sources assuring that sources accounting for not less than 90 per centum of the aggregate emissions of each such pollutant are subject to standards under subsection (d)(2) or (d)(4)." In 1998, EPA published a notice identifying the source categories

²¹ See "Potential to Emit for MACT Standards--Guidance on Timing Issues" Memorandum from John Seitz, Director, Office of Air Quality Planning and Standards to EPA Regional Air Division Directors, May 16, 1995.

²² See National Emission Standards for Hazardous Air Pollutants: General Provisions, Proposed Rule, 72 Fed. Reg. 69 (Jan. 3, 2007).

that would need to be regulated to satisfy § 112(c)(6). 63 Fed. Reg. 17838 (Apr. 10, 1998). EPA did not distinguish between area sources and major sources in the notice. With regard to area sources, the Agency explained that it “will determine whether specific regulation of the area source component of a source category is appropriate, or necessary to meet the 90 percent goal, based on more source category-specific data collected as part of the regulatory process.” *Id.* at 17842.

In the Industrial Boiler GACT proposal, EPA explains that, “The CAA section 112(c)(6) list of source categories currently includes industrial coal combustion, industrial oil combustion, industrial wood combustion, commercial coal combustion, commercial oil combustion, and commercial wood combustion.” 75 Fed. Reg. 31898. Based on further analysis performed in conjunction with the proposal, however, EPA concludes that it only “must regulate POM from coal-fired, biomass-fired, and oil-fired area source boilers” and that it “only need[s] coal-fired area source boilers to meet the 90 percent requirement set forth in section 112(c)(6) for mercury.” *Id.* at 31904. EPA believes that it must develop MACT standards for these pollutants and subcategories because § 112(c)(6) requires standards “under section 112(d)(2) or 112(d)(4).” *Id.* at 31917.

EPA’s proposal to impose MACT standards on Hg emissions from coal-fired area source boilers and POM emissions from coal-fired, biomass-fired, and oil-fired area source boilers is legally unfounded, because EPA has discretion to impose GACT standards for these pollutants and subcategories. The Agency’s failure to acknowledge this discretion renders its legal justification per se arbitrary and capricious and not in accord with the law. *Prill v. NLRB*, 755 F.2d 941, 948 (D.C. Cir. 1985) (“[A]n agency regulation must be declared invalid, even though the agency might be able to adopt the regulation in the exercise of its discretion, if it “was not based on the [agency’s] own judgment but rather on the unjustified assumption that it was Congress’ judgment that such [a regulation is] desirable.” *FCC v. RCA Communications, Inc.*, 346 U.S. 86, 96, 73 S.Ct. 998, 1005, 97 L.Ed. 1470 (1953).”).

As noted above, § 112(c)(6) specifies that “standards under subsection (d)(2) or (d)(4)” must be established for the HAP emissions that EPA determines must be regulated to satisfy the aggregate control requirement. Section 112(d)(2) sets out the basic standard setting methodology for § 112 HAP emissions standards, requiring “the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section” – *i.e.*, “MACT.” Section 112(d)(3) generally requires “MACT” to be no less stringent than the emissions limitation achieved by the better performing sources in the given source category (for existing sources) or the best controlled similar source (for new sources). With regard to “threshold pollutants,” § 112(d)(4) authorizes EPA to forego that formulaic MACT approach and, instead, consider the “threshold level, with an ample margin of safety, when establishing standards” under § 112(d).

Section 112(d)(5) establishes a special rule for area source standards. It provides, “With respect to categories and subcategories of area sources listed pursuant to [§ 112(c)], the Administrator may, in lieu of the authorities provided in [§ 112(d)] ... elect to promulgate standards or requirements applicable to sources in such categories or subcategories which provide for the use of generally available control technologies or management practices by such sources.” In other words, EPA may establish “GACT” standards for area sources rather than “MACT” standards under § 112(d). The statute does not define a method for establishing GACT standards. EPA construes this authority as providing more flexibility than the MACT standard setting process – perhaps most importantly, EPA has concluded that it “can consider costs and economic impacts in determining GACT.”

When setting area source standards for § 112(c)(6) pollutants, EPA has interpreted the requirement to set “standards under subsection (d)(2) or (d)(4)” as requiring MACT (or an alternative health-based standard) to be set for the pollutants. EPA has asserted that the specific reference to §§ 112(d)(2) and (d)(4) prevents the Agency from using the GACT authority that is otherwise available under § 112(d)(5). See, e.g., 72 Fed. Reg. 53814, 53815-53816 (Sept. 20, 2007). And, because cost cannot be considered in the first instance in determining MACT, this interpretation stands to cause certain the area source standards for § 112(c)(6) pollutants to be more stringent than they otherwise might be if GACT could be applied.

EPA’s position that it cannot use GACT to regulate HAP emissions from area source categories that are subject to § 112(c)(6) suffers from two fundamental flaws. The first problem is that it ignores the language in § 112(d)(5) that defines the scope of the Agency’s authority to use GACT. Section 112(d)(5) expressly states that EPA is authorized to use GACT “[w]ith respect to categories and subcategories of area sources listed pursuant to [§ 112(c)].” The CAA provides only two ways for EPA to list an area source category for purposes of regulating HAP emissions from the category under § 112. First, § 112(c)(3) – which is aptly entitled “Area Sources” – provides that EPA “shall list” area source categories “which the Administrator finds presents a threat of adverse effects to human health or the environment ... warranting regulation under this section.” Second, as explained in detail above, § 112(c)(6) authorizes EPA to “list categories and subcategories of sources” – including area sources – as necessary to meet the specified aggregate control requirement for the seven listed HAPs. Since all area source categories – including those listed under § 112(c)(6) – are listed “pursuant to § 112(c),” EPA has authority under the express terms of § 112(d)(5) to use GACT in regulating area source categories listed and regulated under to § 112(c)(6).

The second problem with EPA’s position is that it ignores the language in § 112(d)(5) authorizing EPA to use the GACT method “in lieu of” the § 112(d)(2) MACT procedure. EPA itself has observed that the term “in lieu of” is commonly understood to mean “in place the of” and, thus, has correctly concluded that, “CAA section 112(d)(5) authorizes EPA to promulgate standards under CAA section 112(d)(5) that provide for the use of generally available control technologies or management practices (GACT), *instead of* issuing MACT standards pursuant to CAA section 112(d)(2) and (d)(3).” 73 Fed. Reg. at 1920-1921. In short, the statute plainly says that the requirement to set a standard under § 112(d)(2) can be satisfied by using the alternative GACT procedure specified in § 112(d)(5). As a result, setting GACT under § 112(d)(5) meets the §112(c)(6) requirement to regulate under § 112(d)(2).

Lastly, although EPA has not provided a full explanation of its reasoning in the Industrial Boiler GACT proposal or in any of the prior § 112(c)(6) area source standards, it seems apparent that the Agency is concerned that the express reference in § 112(c)(6) to standards under §§ 112(d)(2) and (d)(4) would not have meaning unless it were construed as an unavoidable obligation to set MACT (or a health based standard) for the § 112(c)(6) pollutants. In other words, the reference to §§ 112(d)(2) and (d)(4) might be “mere surplusage” if it were construed as simply reiterating the standard-setting obligation that otherwise already exists for listed area source categories under § 112.

However, there are other rational explanations for this language that avoid the problems with EPA’s interpretation that are described above. In particular, the requirement to regulate under § 112(d)(2) or § 112(d)(4) could be interpreted as an obligation for EPA to establish pollutant specific standards for each of the seven HAPs listed in § 112(d)(6). Congress itself provided that EPA must regulate close to 200 individual HAPs. It is reasonable to assume that Congress recognized that, of practical necessity, EPA likely would resort to the use of pollutant

categories or surrogate indicators when setting § 112 standards. In this context, it would have been wholly appropriate for Congress to emphasize the need for pollutant-specific standards to assure that specific and appropriate standards were developed for seven of the most problematic HAPs. Support for this interpretation is found in § 129(a)(4), where Congress insisted that EPA “specify numerical emissions limitations” for a specific list of pollutants emitted by waste incinerators. This is a clear signal that Congress assigned a certain greater benefit to pollutant-specific emissions standards.

XIII. EPA should exempt burn-off ovens

Manufacturers are concerned about application of the proposed incinerator MACT standards to small “burn-off ovens,” particularly burn-off ovens that are used to clean paint and plastics from metal parts and dies. Proposed §60.2875

It is not appropriate to categorize burn-off ovens as incinerators, as most burn-off ovens are not actually combusting material. Instead they use lower temperature processes such as melting or pyrolysis and are specifically designed to avoid flaming conditions, which would damage the parts being cleaned. Alternatively, the exclusion for a materials recovery facility also should cover burn-off ovens. See CAA §129(g)(1)) (“materials recovery facilities (including primary and secondary smelters) which combust waste for the primary purpose of recovering metals”). EPA’s own description of burn-off ovens as units “used to clean residual materials off of various metal parts, which are then reused” recognizes that the primary purpose of these units is the recovery of metals. 75 Fed. Reg. 31,951.

Burn-off ovens are typically equipped with afterburners designed to oxidize fully the organics in oven exhaust. Small burn-off ovens are generally not equipped with air pollution controls to address HCl or dioxin/furan formation or metals.

The proposed emission limitations for burn-off ovens include dioxin/furans, HCl, cadmium, and mercury. (Table 9 to Subpart DDDD of Part 60) Testing alone for these pollutants would be very costly, and retrofitting small-burn off ovens with pollution controls would be prohibitively expensive.

The final rule should provide an exemption for all burn-off ovens, or at least those that process “clean” non-chlorinated plastics such as un-painted polyethylene. In the alternative, the final rule should apply more reasonable work practice standards for small burn-off ovens.

For example, a work practice standard specifying clean feed materials and annual burner tune-ups would be more reasonable and appropriate. Some states require air permits that contain standard permit conditions for burn-off ovens mandating the operation of an afterburner at more than 1,400 degrees Fahrenheit. The state permits require that records of afterburner operating temperatures be maintained whenever the units are in operation.

XIV. EPA should use the “health threshold” discretion that Congress allowed under Section 112(d)(4) of the Act

In the Industrial Boiler MACT proposal, EPA acknowledges its authority under § 112(d)(4) to establish a health-based emissions limitation (“HBEL”) for threshold pollutants in lieu of a MACT emissions limitation. However, the Agency proposes not to establish any HBEL “[g]iven the limitations of the currently available information (*i.e.*, the HAP mix where boilers are located, and the cumulative health impacts from co-located sources), the environmental effects

of HCl, and the significant co-benefits of setting a conventional MACT standard for HCl.” 75 Fed. Reg. 32032. Nevertheless, EPA asks for comment on a wide range of issues related to the justification for setting HBELs and the method by which they should be set.

A. *There are several compelling reasons for setting HBELs for HCl and manganese in the Industrial Boiler MACT*

Section 112(d)(4) is a tool that enables EPA to match the stringency of a HAP emissions limitation to the level determined necessary to fully protect human health. As a result, the standard is no more stringent and no less stringent than needed to get the job done. As EPA explains in the proposed rule, § 112(d) generally requires MACT emissions limitations to be set at a level that reflects the performance of the better performing sources in the given source category or subcategory. Section 112(d)(4) provides an alternative to this basic approach for pollutants for which a health threshold has been established. For such pollutants, § 112(d)(4) authorizes EPA to “consider such threshold levels, with an ample margin of safety, when establishing emission standards” under § 112(d).

The default technology-based method of setting MACT standards is a cookie cutter approach that can and does result in HAP emissions limitations that go well beyond what is needed to protect the public from HAP emissions. The clear purpose of § 112(d)(4) is to prevent this from happening. The legislative history of § 112(d)(4) is abundantly clear on this point. In formulating § 112(d)(4), Congress recognized that, “For some pollutants a MACT emissions limitation may be far more stringent than is necessary to protect public health and the environment.”²³ As a result, § 112(d)(4) was provided as an alternative standard setting mechanism for HAPs “where health thresholds are well-established ... and the pollutant presents no risk of other adverse health effects, including cancer....”²⁴

When the first Industrial Boiler MACT was promulgated in 2004, it included health based emissions limitations for HCl and manganese. Under both of these standards, a site-specific risk assessment had to be conducted to prove that emissions from the site were low enough that human health would be protected, with an ample margin of safety. Actual emissions testing of all affected emissions points was required to verify the emissions rates used in the risk assessment. All relevant site parameters were required to be recorded in the site’s Title V operating permit to provide assurance over time that public health would be adequately protected.²⁵

In short, these health-based emissions limitations were rigorous standards that demanded accountability. At the same time these standards were a winner for affected sources because the standards would not have blindly required emissions to be reduced far below the levels needed to assure that the public was protected. It was estimated at the time that these health based standards would have saved over \$2 billion in compliance costs, as compared to the technology-based standards that otherwise would have applied. The first Industrial Boiler MACT was overturned by the D.C. Circuit, but on grounds unrelated to the health based emissions limitations. Notably, in defending the health based emissions limitations, the Department of Justice concluded that, “Environmental Petitioners’ claim that the statute

²³ S. Rep. No. 101-228 (1990) at 171.

²⁴ *Id.*

²⁵ See, generally, 69 Fed. Reg. 55218, 55227-55228 (Sept. 13, 2004).

precludes EPA from establishing alternative standards for threshold pollutants (which petitioners mischaracterize as an exemption) is meritless.”²⁶

Giving full consideration to the use of health-based standards is particularly important in the wake of the series of decisions from the D.C. Circuit that have progressively limited EPA’s discretion to make common-sense decisions when setting MACT standards under § 112. EPA’s authority to set health based standards under § 112(d)(4) is unassailable. For appropriate HAPs and where the relevant facts substantiate its use, EPA can set health-based standards with full confidence that they will survive judicial review.

B. *In light of the exceedingly stringent proposed MACT emissions limitations for HCl and metals (including manganese), it is arbitrary and capricious for EPA not to develop HBELs for these pollutants*

While EPA has discretion in deciding whether to set HBELs under § 112(d)(4), the Agency cannot be arbitrary and capricious in making such a decision. The proposed HCl and PM emissions limitations for all types of industrial boilers are exceedingly stringent. Affected sources will have to spend tens of millions of dollars in order to meet the standards and, as even EPA predicts, a significant number of existing units simply will not be able to meet the standards and will be required to shut down. In addition, the work that EPA performed in support of the HBELs included in the 2004 rule demonstrates that the proposed standards are far more stringent than needed to assure the protection of public health with an ample margin of safety. The costs and burdens on affected sources and the degree of control needed to provide adequate health and environmental protection are both key factors that should be considered by the Agency in deciding whether to adopt HBELs in the Industrial Boiler MACT.

In the proposed rule, EPA completely ignores these factors. The Agency’s discussion of HBELs includes no assessment whatsoever of the costs that might be avoided by adopting HBELs for HCl or manganese. As to potential effects on health or environment, EPA simply raises implementation questions and asserts a lack of information to resolve the questions. Such an approach is facially inadequate in light of the extensive policy, scientific, and technical assessment developed in support of the HBELs in the 2004 Industrial Boiler MACT standard. In short, EPA’s failure to fully consider key factors that are relevant to making an informed decision as to whether HBELs should be adopted is arbitrary and capricious.

C. *EPA has failed to provide a rational basis for ignoring and contradicting the findings made in support of the HBELs included in the 2004 Industrial Boiler MACT rule*

EPA asserts in the proposed rule that its decision to not propose HBELs “is not contrary to EPA’s prior decisions where we found it appropriate to exercise the discretion to invoke the authority in section 112(d)(4) for HCl, since the circumstances in this case differ from previous considerations.” 75 Fed. Reg. 32032. In contrast to “other source categories for which EPA has exercised its authority under section 112(d)(4),” EPA explains that boilers and process heaters are more likely to be co-located with other HAP sources and are often located in heavily populated urban areas where many other HAP sources exist. *Id.* The Agency concludes that, “These factors make an analysis of the health impact of emissions from these sources on the

²⁶ Final Brief For Respondent United States Environmental Protection Agency, D.C. Cir. Case No. 04-1385 (Dec. 4, 2006) at 53-54.

exposed population significantly more complex than for many other source categories, and therefore make it more difficult to establish an ample margin of safety.” *Id.*

These assertions fail to reflect the fact that the industrial boiler source category is one of the few categories where EPA has previously “found it appropriate to exercise the discretion to invoke the authority in section 112(d)(4).” *Id.* As a result, EPA has already drawn conclusions as to how to deal with possible co-location with other HAP sources and how to appropriately consider HAP emissions from other nearby sources. These are not issues of first impression generally or in the specific context of industrial boilers and process heaters. The questions have been asked and answered in 2004 in the context of notice and comment rulemaking for the industrial boiler and process heater source category.

Thus, EPA is mistaken in asserting that its decision not to propose HBELs is “not contrary to EPA’s prior decisions.” *Id.* The decision not to propose HBELs is flatly inconsistent with EPA’s prior determination that HBELs are appropriate and justified for the industrial boiler and process heater source category. EPA’s failure to acknowledge its prior determination and failure to explain why it has raised as questions issues that previously were resolved (such as how to consider co-located HAP sources and nearby HAP sources) render its decision not to propose HBELs arbitrary and capricious.

D. *The co-benefits of collateral non-HAP emissions reductions cannot be used to justify a decision to ignore HBELs*

EPA explains in the proposal that “it considered the fact that setting conventional MACT standards for HCl as well as PM (as a surrogate for metals including manganese) would result in significant reductions in emissions of other pollutants, most notably SO₂, non-consensable PM, and other non-HAP acid gases (e.g., hydrogen bromide) and would likely also result in additional reductions in emissions of mercury and other HAP metals (e.g., selenium).” 75 Fed. Reg. 32032. The Agency notes in particular that its belief that the rule will result in the reduction of up to 340,000 tons per year of SO₂, which it characterizes as “substantial reductions with substantial health benefits.” *Id.* EPA asserts that Congress acknowledged the possibility that MACT standards would result in collateral non-HAP emissions reductions and, therefore, that “the Agency may consider such benefits as a factor in determining whether to exercise its discretion under section 112(d)(4).” *Id.*

EPA is mistaken. Consideration of non-HAP collateral emissions reductions is impermissible in setting MACT standards. Section 112(d)(2) provides an express list of factors that EPA may consider in setting § 112(d) standards – including “the cost of achieving such emission reduction, and any **non-air quality** health and environmental impacts and energy requirements.” This list does not allow consideration of non-HAP air quality benefits, such as the co-benefits of reducing PM_{2.5} emissions. This restriction is an unambiguous command that EPA should not consider non-HAP air quality benefits in setting standards under § 112(d). This prohibition extends of necessity not only to rules that literally list a criteria pollutant as a HAP but also to any rule that in effect treats a criteria pollutant as a HAP. *National Lime Ass’n v. U.S. EPA*, 233 F.3d 625, 638 (D.C. Cir. 2000).

By basing its rejection of the health-based approach for Boiler MACT on the co-benefits of criteria pollutant reduction, EPA is in effect unlawfully treating a criteria pollutant as a HAP. EPA’s action here is not the simple use of a criteria pollutant as a surrogate for a HAP, which courts have upheld as long as EPA proves the scientific underpinning of the surrogate

relationship. *Id.* Rather, EPA argues directly that it is the reduction in criteria pollutant emissions that causes it to reject the health-based approach. This EPA cannot do.²⁷

EPA's sole support for its "collateral benefits" theory is legislative history -- the Senate Report that accompanied Senate Bill 1630 in 1989. But the D.C. Circuit rejected precisely the same argument in *National Lime*. In that case, EPA supported its argument regarding particulate matter as a surrogate for HAP metals by referring to the same Senate Report discussed above. The court rejected EPA's argument, noting that the Senate Report referred to an earlier version of the statute that was ultimately not enacted, and hence was irrelevant:

The final statute, by contrast, unqualifiedly prohibits listing a criteria pollutant as a HAP, that is, regardless of the reason. Because the comment in the Senate Report regarding PM and metals was made before the blanket prohibition upon regulating PM as a HAP was added to the statute, the report is irrelevant to our construction of 7412(b)(2) as enacted.

National Lime at 638. Similarly here, EPA cannot use the language of a Senate Report that did not reflect the language of the statute as enacted to support its co-benefits theory and rejection of the health-based approach.

Moreover, even if it were relevant, the language in the Senate Report cited by EPA appears to address only area-source GACT standards under Section 112(d)(5), and therefore is not relevant to interpretation of MACT standards under Section 112(d)(2) or the health based alternative under Section 112(d)(4). And, in the final analysis, "it is the statute, and not the Committee Report, which is the authoritative expression of the law." *City of Chicago v. Env. Defense Fund*, 511 U.S. 328, 337 (1994). Here, the statute clearly provides that MACT standards may address only HAPs, not criteria pollutants. See *National Lime Ass'n* at 638.

But, even if it were not unambiguously prohibited, consideration of non-HAP air quality benefits under § 112(d)(4) would be unreasonable. National Ambient Air Quality Standards ("NAAQS") are in place for all relevant pollutants, including ozone, SO₂, and PM. A MACT standard is a very imprecise tool for helping to attain and maintain such NAAQS because it imposes across-the-board requirements in circumstances where tailored solutions are needed. Each area has its own unique mix of sources and its own particular needs in terms of what reductions are needed and where such reductions should be achieved. SIP-based air quality programs provide the needed flexibility to design a program that effectively addresses local air quality needs. MACT standards are an unreasonably blunt instrument for dealing with non-HAP air quality issues.

XV. Conclusion

Manufacturers oppose the rules as currently proposed by EPA. As discussed in these comments, EPA has proposed rules that are premised on an incorrect interpretation of the Clean Air Act and that are supported by severely flawed data and analysis. EPA needs to make significant adjustments to the proposed rules before finalizing any of them. Manufacturers urge the EPA to only issue proposals that will capitalize on the manufacturing sector's demonstrated record of technological innovation that continues to improve the quality of life for all Americans. For more information related to these comments, please contact Keith McCoy

²⁷ Moreover, criteria pollutants from boilers are strictly regulated elsewhere under the Clean Air Act through New Source Performance Standards and other provisions of the Act.

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