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RE: EPA's Proposed Rule for National Emissions Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers 75 FR 31896, June 4, 2010, Docket EPA-HQ-OAR-2006-0790.

The American Chemistry Council (ACC)¹ appreciates the opportunity to comment on U.S. Environmental Protection Agency's proposed rule on National Emissions Standards for Hazardous Air Pollutants for Area Sources: Industrial/Commercial/Institutional Boilers. ACC members own and operate area sources with boilers that are potentially impacted by this proposal.

Our detailed comments are attached for your review. If you would like to discuss any of the comments in more detail, please contact me at (703) 741-5242 or jim_griffin@americanchemistry.com.

Very truly yours,

A handwritten signature in black ink that reads "Jim Griffin".

Jim Griffin
Senior Director, American Chemistry Council

Attachment

¹ *The American Chemistry Council (ACC) represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care[®], common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$674 billion enterprise and a key element of the nation's economy. It is one of the nation's largest exporters, accounting for ten cents out of every dollar in U.S. exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.*



Comments on EPA's Proposed Rule for
National Emissions Standards for
Hazardous Air Pollutants for Area Sources:
Industrial, Commercial, and Institutional Boilers
75 Fed. Reg. 31896, June 4, 2010
Docket EPA-HQ-OAR-2006-0790

Submitted by

The American Chemistry Council

Executive Summary

The American Chemistry Council (ACC) is pleased to submit comments on the Environmental Protection Agency's (EPA or Agency) proposed National Emission Standards for Hazardous Air Pollutants (NESHAP) for Area Sources: Industrial, Commercial, and Institutional Boilers (Boiler GACT). As described in detail in these comments, it is imperative that EPA craft a rule that provides protection to public health and the environment without requiring significant financial expenditures that result in no added environmental benefit, especially in this time of severe economic hardship and fierce competition from overseas manufacturers.

ACC believes that EPA made the proper decision not to regulate gas-fired boilers under this rule, as gas is clean burning and low emitting. However, EPA has provided no basis for its assertion that mercury (Hg) and Polycyclic Organic Matter (POM) emissions from coal, liquid, and biomass boilers must be regulated under this standard in order to satisfy the requirement that 90% of nationwide emissions of these pollutants must be regulated under §112 standards. However, even if EPA needed to regulate area source industrial boilers to meet §112(c)(6), it would not be required to adopt maximum achievable technology (MACT) standards, as it has done in the proposed rule. CAA §112(d)(5) authorizes EPA in most cases to set standards for area sources using "generally available control technologies" (GACT) or "management practices" rather than "MACT." EPA has ample justification to establish a management or work practice for all relevant HAPs requiring periodic tune-up of affected boilers, instead of proposing numerical standards based on a handful of data points. The emissions data on which EPA relies are scant, inaccurate, and not representative of the population of boilers that will be subject to this rule.

EPA's lack of proper treatment for startup and shutdown periods in developing the numerical emission limits in the proposed rule is also of concern. Averaging times alone will not be enough to allow sources to meet the proposed standards during startup and shutdown. We provide detailed comments on why these periods should be considered separately from normal operation and believe that work practices such as following an emissions minimization plan are appropriate for startup, shutdown and malfunction conditions.

The Agency's proposed use of surrogates is appropriate as it ensures environmental protection while reducing the measurement burden on affected facilities. We note, however, that the proposed CO emission limits for liquid boilers are far beyond what is required to ensure HAP emissions are minimized.

If EPA proceeds with setting numerical standards rather than implementing management practices or GACT, these comments include detailed suggestions on how EPA can improve the effort to consider fuel variability in the floor setting process. EPA needs to further consider operational variability in setting a CO emission standard, and provide evidence that 3-run stack tests adequately capture CO emissions variability. EPA should also reduce the frequency of testing and monitoring and provide an exemption for temporary boilers in order to reduce the burden on area sources that will be regulated by this rule.

We recognize the time and effort that EPA has put into this proposed rule. However, revisions to the proposed rulemaking approach are necessary to reduce the cost and impact of this rule. We strongly encourage the Agency to rethink its approach and to set standards based on GACT or management practices rather than the proposed strict numeric emissions.

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I. Cost And Impacts Of Proposed Rule

ACC members use many boilers of various types, sizes, and fuel configurations to meet the heat and steam demands needed to energize the business of chemistry. ACC member companies are very concerned that the proposed requirements are overly burdensome and will require substantial financial expenditures at levels higher than those estimated by EPA. Per the memorandum “Methodology for Estimating Control Costs for Industrial, Commercial, Institutional Boilers for the National Emission Standards for Hazardous Air Pollutants – Area Source,”¹ EPA has followed the costing assumptions and techniques in the OAQPS Control Cost Manual (EPA 452/B-02-001). The memo states that the only control technologies evaluated were “fabric filter, low NOx burner, linkageless boiler management system, and multiclone.” The memorandum does not specifically discuss how costs were estimated for these technologies, but instead refers to the discussion in the memorandum prepared for the Boiler major source rule, “Methodology for Estimating Control Costs for the Major Source Industrial, Commercial and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants.”²

As stated in our comments on the proposed Boiler major source rule (also referred to as the “Boiler MACT”) cost analysis, we do not agree with the methodology used to determine the cost of CO emissions reductions for liquid fired boilers. The ERG MACT cost memorandum referenced by the GACT cost memorandum states that if baseline CO emissions were between 400 and 1000 ppm for boilers designed to burn liquid fuels, the cost of a low-NOx burner was estimated to achieve the MACT floor emission limits. Based on conversations with burner vendors, a low-NOx burner is typically guaranteed to produce CO emissions of 50 to 100 ppm for liquid boilers. However, the CO limits for these boilers in the proposed rule are 1-2 ppm. ACC member experience with Low NOx Burners firing fuel oil is that members will be unable to routinely meet the proposed CO limit. EPA’s assumption that burner retrofit can result in achieving the proposed 2 ppm CO limit for liquid boilers is simply unfounded, and it should provide justification for why it believes this is an appropriate approach or re-evaluate its assumption and revise the MACT floor accordingly. If the CO limits are finalized at 2 ppm for liquid fuel boilers, we believe that a new burner will not be sufficient for all area source boilers to reach that limit. EPA should revise the CO limit for liquid boilers to more accurately reflect what boiler and burner manufacturers currently guarantee not only for new boilers, but also for retrofit to the myriad existing boiler designs, as this would be a more appropriate approach for setting a GACT limit and would not require costly controls such as a CO catalyst.

In addition, EPA does not have enough data to support its assumption that fabric filters alone will be sufficient for area source coal-fired boilers to meet the proposed mercury limit. Sources likely will be burning coal with sufficiently variable mercury content to make carbon injection necessary as a control measure. EPA only gathered mercury emissions data from 9 coal boilers out of the estimated 3,710 that will be regulated by this rule and the Agency has gathered no fuel variability data for these boilers. Not accounting for actual or potential fuel mercury variability among the best performers is a gross omission that results in a standard that is not reflective of emission rates achieved in practice by best performers under worst case conditions that can be

¹ EPA-HQ-OAR-2006-0790-0032

² EPA-HQ-OAR-2002-0058-0803

expected to occur, and this creates a standard that severely limits the achievability by other affected sources. This is contrary to CAA requirements. An analysis of EPA's database for boilers at major sources³ shows that there are over 100 boilers in the coal subcategory with mercury emissions greater than the proposed area source limit of 3E-06 lb Hg/MMBtu, and over 40 of these units are equipped with fabric filters. As EPA has acknowledged that mercury is a fuel-based HAP, it is reasonable to assume that there are also coal-fired boilers at area sources that will not meet the proposed mercury limits with a fabric filter alone. Therefore, if EPA intends to retain a numerical emission limit for mercury in this rule, the cost analysis for mercury controls must be re-evaluated.

II. Level Of Standards

A. EPA Has Authority To Set GACT Standards For Section 112(c)(6) Pollutants.

Pursuant to §112(d)(5) of the Clean Air Act, EPA may establish emission reduction standards based on generally available control technology (GACT) for any HAP, including polycyclic organic matter (POM) and mercury (Hg). However, EPA is proposing to regulate PM and Hg emissions based on its MACT based analyses and to require area sources to install MACT to comply with these standards. We believe EPA should reconsider this proposal and reconsider the MACT analysis that is the basis for the proposed rule.⁴ A discussion on background and several specific recommendations follow below.

Section 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)(2). 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 –

³ EPA-HQ-OAR-2002-0058-0789

⁴ MACT Floor Analysis for the Industrial, Commercial, Institutional Boilers National Emission Standards for Hazardous Air Pollutants – Area Source; Memorandum from Amanda Singleton, ERG to Jim Eddinger, EPA; April 2010. EPA-HQ-OAR-2006-0790-0049

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 §§ 12(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 will cause certain of the area source standards for §112(c)(6) pollutants to be more stringent than they otherwise would be if GACT were applied.

Section 112(c)(6) 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 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.

In the preamble to this proposed rule, EPA explains that the § 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 31907. 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.

B. EPA Failed To Justify Its Conclusion That It Must Regulate POM And Mercury From Area Sources And That It Must Do So Using MACT.

EPA’s proposal to impose MACT standards on mercury 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 or management practice 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).

EPA’s MACT proposal for the §112(c)(6) pollutants also is flawed because the Agency provides no basis for its assertion that mercury and POM must be regulated under this standard in order to satisfy the requirement that 90% of nationwide emissions of these pollutants must be regulated

under §112 standards. In 1998, when EPA published the list of source categories that to be regulated to meet the §112(c)(6) 90% control requirement, the Agency did not draw firm conclusions as to whether any area source categories needed to be regulated. Instead, EPA 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.”⁵

With regard to POM, the proposed rule and supporting documentation provides no such additional analysis justifying the need to regulate area source POM emissions to satisfy the 90% goal. The preamble simply asserts, with no further analysis or supporting information, that “[w]e continue to believe that we must regulate POM from coal-fired, biomass-fired, and oil-fired area source boilers in order to meet the requirement in section 112(c)(6).”⁶ In light of the failure of the 1998 notice to provide justification for regulating area source categories, this conclusory assertion does not provide a rational basis or adequate factual justification to support the proposed determination that area source industrial boilers must be regulated, and regulated with MACT, to satisfy the §112(c)(6) 90% requirement.

Similarly, with regard to mercury, the preamble to this proposed rule states that “based on the information we have learned to date as we are developing standards for various source categories, such as major source boilers, gold mines, commercial and industrial solid waste incinerators, and other categories, we believe that we only need coal-fired area source boilers to meet the 90 percent requirement set forth in section 112(c)(6) for mercury.”⁷ The area source MACT floor memo further explains that:

EPA estimates that they have subjected to regulation or propose to regulate 90.3 percent of the 172.3 tons in the 1990 emissions inventory for mercury. Coal-fired area source boilers would provide an additional 0.72 percent. Regulation of these boilers under MACT would provide an anticipated margin to ensure that the obligations under CAA section 112(c)(6) are met.⁸

To begin, neither the proposed rule nor the MACT floor memo provide the data that support the proposed determination that 90.3 percent of the 1990 emissions inventory for mercury is subject to regulation. The proposed rule simply makes a conclusory assertion that is unsupported by facts or relevant information, which renders any final action based on this assertion invalid for failure to provide adequate record support.

Moreover, assuming for the sake of argument that the analysis is correct and adequately supported, § 112(c)(6) does not obligate EPA to regulate in order to provide “an anticipated margin to ensure that the obligations under CAA section 112(c)(6) are met.” EPA has either exceeded the 90% standard or not. When the facts show that the 90% standard is met, EPA has satisfied its §112(c)(6) obligation. When the facts are not sufficient for EPA to reliably draw conclusions, EPA’s obligation is to seek the additional information necessary to determine

⁵ 63 Fed. Reg. 17838, 17842 (Apr. 10, 1998).

⁶ 75 Fed. Reg. at 31904.

⁷ *Id.*

⁸ MACT Floor Memo EPA-HQ-OAR-2006-0790-0049 at 2.

whether additional regulations are needed to meet the 90% standard. EPA's obligation to provide record support for its regulatory decisions is turned on its head by the assertion that the lack of facts or uncertainty as to the available information justifies additional regulation under §112(c)(6).

C. EPA Failed To Recognize Its Clear Statutory Authority To Set Standards Based on GACT.

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 that category. First, §112(c)(3) – which is 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 §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 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 states 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 this proposed area source rule or in any of the prior §112(c)(6) area source rules, 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) is meaningless unless it is 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 reasonable explanations for this language that avoid the problems described above with EPA's interpretation. 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.

D. EPA Should Set Standards Based On GACT

EPA should implement "GACT" instead of "MACT" in all cases where GACT is authorized and appropriate. Section 112(d)(5) authorizes EPA to establish standards for area sources based on GACT (rather than MACT and residual risk standards under subsection (f) of §112), or management practices. The language Congress chose to use in this section is instructive in its breadth and generality. First, GACT is not defined, which means that EPA has significant discretion in determining what constitutes GACT and, in any event, is not tied to the formulaic MACT floor setting processes under §§ 112(d)(2) and (3) which are driving unreasonable results that are not representative of emissions performance achieved in practice by area sources. Second, EPA may establish GACT standards and in so doing is not required also to review or promulgate residual risk standards for area sources regulated under GACT. *See* §112(f)(5).

Even if the Agency were to be able to justify the need to regulate certain area sources under §112(c)(6) and do so using MACT for certain the pollutants specified in §112(c)(6), the sheer number and diversity of sources in certain area sources categories, such as industrial boilers, warrant a finding by EPA that work practice standards under §112(h) are appropriate and justified. EPA has made similar decisions in other NESHAP.⁹

III. Floor Setting Approach

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 proposed emissions limits. Instead, EPA set individual limits for each HAP that reflect the best performing sources in a subcategory 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 that have not actually been achieved by any single, real world source,

⁹ NESHAP for Area Sources: Acrylic and Modacrylic Fibers Production, Carbon Black Production, Chemical Manufacturing: Chromium Compounds, Flexible Polyurethane Foam Production and Fabrication, Lead Acid Battery Manufacturing and Wood Preserving; 72 Fed. Reg. 38864.

and possibly never will. Creating hypothetical “best performing” units that demand compliance with emission standards not achieved by any actual source or sources 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 the actual performance of “sources.”

The proposed MACT standards for area source industrial boilers are based on pollutant-by-pollutant analyses that rely on a different set of best performing sources for each separate HAP standard. *See*, 75 Fed. Reg. 31905 (“The MACT floor limits for each of the HAP and HAP surrogates (mercury and CO) are calculated based on the performance of the lowest emitting (best performing) sources in each of the subcategories.”). In other words, EPA “cherry picked” the best data in setting each standard, without regard for the sources from which the data come.

The statute unambiguously directs EPA to set standards based on the overall performance of “sources.” 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, Sections 112(d)(3) emphasizes that EPA must focus on what emissions reductions are achievable “in practice” for a “source.”

(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 result 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).

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 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 proposed standards against the actual performance of existing sources. As discussed below, EPA's proposed limits are not achievable.

B. EPA Violated The Clean Air Act By Failing To Set Floors That Can Be Achieved Using The Source's Existing Emissions Controls.

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 evaluating 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:

The MACT floor limits for each of the HAP and HAP surrogates (mercury and CO) are calculated based on the performance of the lowest emitting (best performing) sources in each of the subcategories. We ranked all of the sources for which we had data based on their emissions and identified the lowest emitting 12 percent of the sources for each HAP.

75 Fed. Reg. at 31905. 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.¹⁰ 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 §§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

¹⁰ 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. EPA-HQ-OAR-2002-0058-0815).

(3) preserve, protect and enhance the economic vitality of the national economy. Thus, in line with other key provisions of the Act, §§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 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 §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, 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 §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 §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 §112(d)(2). The first sentence of §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: §111 (New Source Performance Standards (NSPS)), §129 (incinerators), §165 (Best Available Control Technology (BACT) for certain new construction projects), §172(c)(1) (Reasonably Available Control Technology (RACT) for existing sources as control by State Implementation Plans), and §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 §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 §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.”¹¹ Plainly, in Congress’s mind, §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 CAA requires that the Agency set emissions standards that can be achieved by existing controls in use within the subcategory. EPA accepted that it

¹¹ 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).

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 col. 1 (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 must focus only on actual emission rates in setting the floor.¹² EPA vigorously defended its view in its response 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.”¹³

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 (D.C. Cir. 2007).

ACC respectfully urges EPA to uphold its 2004 position. 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

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

¹³ Final Brief for Respondent United States Environmental Protection Agency, at 49 (Dec. 4, 2006).

like design or, if that were not practicable, base the ultimate standard on a universally applicable a work practice, such as annual tune-ups.

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 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 determine the types of fuels and emissions controls used by the vast majority of industrial boilers in use today. This is "emissions information" that the Agency has impermissibly disregarded in selecting the group of sources that represent the top 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.

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)(3) 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. 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 necessarily synonymous with the "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 rule, 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 2004 Boiler rule. 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 this proposed area source 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." *Sierra Club v. EPA*, 479 F.3d 875, 879 (D.C. Cir. 2007). 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.

EPA seems to be relying on this dictum (it was unnecessary to resolve the issue before the court) to prohibit the adoption of any measure of "best performing" other than lowest emission levels. This is an unnecessarily narrow view of the language in *Brick MACT*, and is contrary to the position EPA took in its 2009 proposed NESHAP for the Portland Cement Manufacturing Industry. In that proposal, EPA solicited comments on ranking best performers based on removal efficiency rather than the lowest emitters. EPA legally supported this manner of ranking by, among other things, citing the court in *Sierra Club v. EPA*, 167 F.3d 658, 661 (D.C. Cir. 1999) "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." EPA then acknowledges that "the *Brick MACT* opinion states, arguably in *dicta*, that best performers are those emitting the least HAP."¹⁴

It is important to note that 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.

¹⁴ 74 Fed. Reg. 21136, 21149 (May 2, 2009). (Emphasis in the original)

Furthermore, EPA's interpretation of *Brick MACT* collides with Section 112(d)(3) and other D.C. Circuit decisions requiring EPA to take non-technological and non-intentional 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. 54875, 54884 (Sept. 27, 2007). While the HWC Final Rule hews to the unduly narrow view of the *Brick MACT* decision embraced by EPA here, in the HWC rule 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 § 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.

IV. Variability

A. EPA Failed To Properly Consider Variability.

Overall, ACC fully supports 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 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. 4652, 4670 (Jan. 30, 2004).

B. EPA 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 ((D.C. Cir. 2001) (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.

V. Method Of Standard Setting

A. **EPA Cannot Set Numerical Emission Limits Without First Gathering More Data.**

EPA relied on a very small amount of data to develop the proposed standards. As disclosed in the preamble and in its floor memo,¹⁵ EPA has very little emission data:

- no emission data for POM for any subcategory,
- no mercury emission data for the liquid subcategory,
- no surrogate for mercury, but CO as a surrogate for POM
- mercury emission data for only 9 coal boilers and 2 biomass boilers,
- no state regulations or permit data for mercury or POM,
- a few State permits with CO limits for coal, oil and wood-fired boilers,
- limited emissions data for CO (5 coal boilers, 30 wood boilers, and 68 oil boilers)

EPA has estimated that there are almost 183,000 existing area source boilers at 92,000 facilities (3,710 coal, 10,958 biomass, and 168,003 liquid),¹⁶ so the small amount of data collected is representative of the performance of a very small fraction of existing area source boilers. Therefore, ACC thought it appropriate to examine what boiler manufacturers typically guarantee for performance of these boilers, and what states typically require as control technology and emission limits for these boilers.

B. **Information Provided By Boiler Suppliers Demonstrates That EPA's Proposed Numerical Limits Are Not Attainable.**

Input was requested from the leading supplier of burners for gas- and liquid-fired boiler applications to determine what CO emission guarantees would be provided for their installations. For liquid-fired applications, the supplier offers a CO emissions guarantee of 100 ppmvd (@ 3% O₂), for loads ranging from 25% to 100%. The supplier emissions guarantees are not valid below 25% load. This is due to the higher levels of excess air at low loads that result from inherently less effective fuel/air mixing at lower burner velocities, thus requiring higher excess air operation, and the minimum airflow levels required by the National Fire Protection Act for multiple burner boilers. In addition, the supplier noted that CO emissions during a cold startup would be significant due to the reduced temperatures of the boiler heat recovery surfaces. Under these conditions, unburned fuel that comes into contact with the cold surfaces will be quenched and smolder (instead of combusting completely), and will form significant amounts of CO. The

¹⁵ EPA-HQ-OAR-2006-0790-0049

¹⁶ EPA-HQ-OAR-2006-0790-0037

supplier noted that CO emissions during a cold startup could average several hundred ppm for the first hour or more. Other sources confirm the numbers provided by the leading supplier.

A boiler manufacturer has indicated that CO emission limits of 30 to 75 ppmv are appropriate, depending on boiler size.¹⁷ The Texas Commission on Environmental Quality's presumptive BACT for boilers greater than 40 MMBtu/hr is 50 ppmvd at 3% O₂.¹⁸ A review of EPA's RACT/BACT/LAER Clearinghouse database for oil-fired boilers less than 100 MMBtu/hr indicates a 100 ppm CO BACT limit is appropriate.¹⁹ If levels of 2 ppm are not being guaranteed by boiler and burner manufacturers or being required by states as BACT in PSD analyses, then it is not appropriate to require 2 ppm CO as a GACT limit in this rule. EPA should re-evaluate the CO limit being proposed as GACT and set the limit based on levels recommended by states and manufacturers (e.g., 100 ppm).

C. EPA Must Consider Fuel Mercury Content Variability In Establishing Proposed Limits.

EPA has also inappropriately ignored fuel mercury content variability as a parameter that influences emissions under this rule, despite establishing fuel pollutant content variability factors under the Boiler MACT rule.²⁰ As EPA is using some data from the proposed Boiler MACT rule to set limits under this area source rule, EPA should also acknowledge similar fuel variability factors the Agency acknowledged when developing the proposed MACT limits, especially when EPA is using such a limited amount of test data to establish the proposed limits. The proposed coal mercury limit should be adjusted to account for the full range of coal mercury content that can be expected by a source located anywhere in the USA, recognizing inherent limitations to availability and shipping. The US Geological Survey has a coal quality database that can be examined for this information.²¹

D. EPA Should Establish Work/Management Practices Instead of Numerical Emission Limits for CO.

As stated above, we believe that EPA is authorized to establish GACT standards in lieu of MACT standards. Therefore, in order to greatly reduce the burden of this rule on small facilities operating boilers, EPA should establish a work practice standard for CO instead of emission limits. EPA acknowledges in the preamble that the state of New Jersey requires facilities to operate their boilers according to the manufacturer's specifications instead of setting numerical CO emission limits.²² For small sources, we believe that this is a much more appropriate approach than requiring ongoing monitoring, recordkeeping, and stack testing. EPA should propose tune-ups and proper boiler operation as work practice standards for CO.

¹⁷ EPA-HQ-OAR-2006-0790-0392.1

¹⁸ http://www.tceq.state.tx.us/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact_boilheatfurn.pdf

¹⁹ <http://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=eg>

²⁰ 75 Fed. Reg. 32021

²¹ <http://energy.er.usgs.gov/products/databases/CoalQual/index.htm>

²² 75 Fed. Reg. 31906

E. Emission Limits Are Not Needed For Mercury From Biomass And Oil-Fired Boilers.

ACC agrees with EPA that emission limits for mercury are not needed for area source oil and biomass boilers. Emissions of mercury from these boilers at area sources are not expected to be significant and make up only 0.34% of the baseline 1990 national emissions inventory, as indicated in the report EPA references in the preamble to the proposed rule: 1990 Emissions Inventory Of Section 112(c)(6) Pollutants.²³ Emissions controls for mercury from area source liquid and biomass boilers would not be cost effective and would not provide measurable HAP emissions reductions.

VI. Subcategories

A. EPA Has The Authority To Subcategorize

CAA §112(c)(1) instructs EPA to establish “categories and subcategories” of sources for regulation under §112. Section 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).

The language above 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

²³ <http://www.epa.gov/ttn/atw/112c6/final2.pdf>

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.²⁴ (Emphasis added.)

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

²⁴ 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.

C. EPA Should Subcategorize By Boiler Type For CO

If EPA intends to set numerical standards for CO in this rule, subcategories based on boiler design should be established under both the coal and biomass boiler subcategories, similar to the approach used in the proposed boiler major source rule. EPA acknowledges in the preamble to that rule that boiler design does impact organic HAP emissions (for which EPA has proposed CO as the surrogate):

“Within the basic unit types there are different designs and combustion systems that, while having a minor effect on fuel-related HAP emissions, have a much larger effect on organic HAP emissions. Therefore, we decided to further subcategorize based on these different unit designs but only in proposing standards for organic HAP emissions.”²⁵

The proposed coal boiler CO limits for area sources are less stringent than the proposed MACT limits for major sources and the proposed limit would seem to be achievable by most area source coal boilers. However, the biomass boiler CO limits for area sources are more stringent than the proposed biomass boiler CO limits for major sources, which is not appropriate. Based on information being compiled by other permitting agencies and trade associations and being submitted in separate comments to this docket, these proposed limits will not be achievable for many types of biomass boilers. If EPA continues on the path of setting numeric standards for CO from coal and biomass boilers, the same boiler design considerations should be made under the area source rule as EPA is making under the major source rule. The same boiler design characteristics influence emissions for boilers located at area sources as those that influence emissions from boilers at major sources. EPA should review and consider additional data on boiler design before setting CO limits for solid fuel area source boilers.

D. A Subcategory Is Needed For Limited Use Units

EPA should establish a subcategory for “limited use” units. While the 2004 Boiler rule treated units with average capacity factors of 10% or less separately, the proposed area source and MACT rules do not continue that approach. Instead, EPA presumes that limited use units are similar to those operated full-time which burn a similar fuel. Limited use sources operate intermittently and for shorter periods of time (*e.g.*, small package boilers that are only used during outages, a backup boiler that runs when other units are being fixed, or a peaking unit used to supplement supply during peak demands). 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 from sources which operate in efficient steady-state manners. *See* 75 Fed. Reg. 32023 (“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.”). 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 and would be cost prohibitive to install and use for only short periods of time during a year. These are just the sort of “class” and “type” distinctions which merit consideration for subcategorization under §112(d)(2).

²⁵ 75 Fed. Reg. 32017

VII. Achievability

A. The Proposed CO Limits For Oil-Fired Units Are Not Generally Achievable.

Carbon monoxide is the most common product of incomplete combustion (PIC), and because of its associated chemical kinetics, is one of the most difficult PICs to oxidize completely. As such, CO emissions have historically been used as an indicator of the quality of the combustion process. In concept, low CO emissions should equate to negligible emissions of other organic compounds. While this is generally true, the mechanisms by which CO is formed and destroyed in the combustion process are different than for other organics. As such, in cases where other organic compounds have been completely oxidized, CO concentrations may still be elevated.

EPA is proposing to regulate CO as a surrogate for urban organic HAP. We are unaware of any relevant testing data that correlates the relationship between HAP and CO when firing oil and operating at CO levels of less than 100 ppm. Data from the Petroleum Environmental Research Forum Project 92-19²⁶ provides some of the most complete data between the relationship between CO and HAP from units firing gas. Based on this data, while there is a fairly linear correlation between decreasing CO and decreasing HAP at higher CO levels, once the CO values fall under 100 ppm further reduction of CO does not provide any substantial reduction of HAP. This data was correlated for CO versus hydrocarbons, aldehydes, PAH, LVOC, and HVOC. Based on this data, one may conclude that the reduction of CO from 100 ppm to 1-2 ppm may not create any additional benefit in terms of HAP reductions. EPA has presented no data, nor any scientific analysis, that would show that this relationship between CO and HAP's would be any different for oil firing. Therefore the requirement for oil-fired units to control CO to these extremely low levels cannot be substantiated as providing any significant reduction in HAP versus a CO level that can be reasonably achieved, such as 100ppm.

Dramatic reductions in CO emissions do not necessarily improve the quality of the combustion, thereby minimizing emissions of other organic compounds. Instead, forcing CO emissions lower and lower ends up over-constraining the combustion process, producing negative impacts on other air quality concerns, without documented improvements in emissions of organics. Most boilers are designed to mix fuel and air at an appropriate ratio, and to provide sufficient residence time for the fuel to combust completely. Obviously, these factors are fuel-dependent, as a gaseous fuel will require less time for complete combustion than a liquid fuel, which in turn requires less time to burn than a solid fuel. The need for longer residence time is why the radiant sections in solid-fuel fired boilers are larger than for gas-fired units. The size of the boiler is typically optimized to allow for complete combustion, while minimizing the cost of construction materials and installation cost. If the construction cost were not a concern, a new boiler could be designed with additional residence time to complete the combustion process and minimize CO emissions, but this is obviously not the case.

Unfortunately, increasing the size of the furnace is not an option for existing units. For these units, the strategy for reducing CO emissions is typically to raise the level of excess oxygen. The increase in oxygen concentration has two positive effects. First, it acts to overcome poor

²⁶ <http://www.epa.gov/ttnatw01/iccr/dirss/perfrept.pdf>

distribution of the fuel. Second, it increases the flame temperature, which speeds up the combustion reactions, allowing more complete combustion to occur for the same residence time.

However, there are a number of negative impacts associated with operating a boiler at higher levels of excess oxygen. The main impact is decreased efficiency, since the efficiency gain by reducing CO is minuscule compared to the increased dry gas loss due to increased excess air (more energy carried out the stack due to higher flue gas volume and higher flue gas temperature). Many boilers do not have sufficient fan capacity to run with elevated excess oxygen at the high end of the load range. Therefore, these units would effectively be de-rated by such strategy unless fans are replaced, which can be a major revision and is not always possible. A site might have to add another boiler to offset the reduction in steam generating capacity.

The minimization of excess oxygen in boiler applications is a key feature for maximizing boiler efficiency. The boiler efficiency is defined by the amount of combustion air that is present, and the difference between the ambient temperature and the stack exhaust temperature. The more air that is heated up through the combustion process, the more heat is lost to the atmosphere, causing the boiler to be less efficient. A less efficient boiler will require more fuel to be fired to produce a given amount of steam. The additional fuel firing results in higher operating costs, and higher greenhouse gas emissions.

Minimizing the level of excess oxygen is also a primary strategy for reducing NO_x emissions from a boiler. The NO_x formation mechanisms are dependent upon the temperatures in the flame zone, and the stoichiometry. Reducing the level of excess oxygen reduces the peak flame temperature, which reduces the rate at which the nitrogen in the air disassociates. As such, there is less monatomic nitrogen available to be oxidized to form 'thermal NO_x'. Similarly, if there is less oxygen present, the monatomic nitrogen is less likely to be oxidized (and more likely to react with a second monatomic nitrogen to form diatomic nitrogen). This reduces both the amount of thermal NO_x, and the 'fuel NO_x' (NO_x that is formed by the release of fuel-bound nitrogen). Therefore, increasing the level of excess oxygen will result in higher NO_x emissions.

Low-NO_x burner (LNB) designs manipulate the stoichiometry within the flame to minimize NO_x formation. These designs establish a fuel-rich zone for the initial phase of combustion, and then add air at a later stage in the outer regions of the flame. In the initial phase, there is not sufficient oxygen available to form significant amounts of NO_x, and in the secondary phase, the flame is much cooler, which also inhibits NO_x formation. However, these burners often operate with CO emission up to 100 ppmvd in the upper part of the load range. At mid loads, the CO begins to increase and at low loads, it may reach 400 ppmvd for a liquid-fired boiler. These low-NO_x burners will not be able to achieve CO emissions as low as 2 ppmvd over all operating scenarios.

The requirements of the National Fire Protection Act (NFPA) specify the minimum total air flow at which a boiler can operate, which is independent of the boiler load. This value is commonly 25 or 30 percent of the total air flow. As a result, boilers that are operating at loads less than 25% experience increasing levels of excess air because the fuel flow is decreasing with load, but the air flow remains fixed. The amount of excess air can become sufficiently high that it acts as a heat sink and reduces the flame temperature. The cooling of the flame slows the combustion

kinetics, and often produces higher CO emissions. Therefore, low CO emission limits could restrict the minimum load capability of a boiler. Since boilers are often run at minimum load (either in warm standby mode, or due to low steam demand), this results in the boiler 'idling' at a higher load than was previously necessary. An obvious outcome of operating at higher load is the increased fuel costs. Another is the relative increase in greenhouse gas emissions.

The use of CO as a surrogate for the reduction of organic compounds is not new, but that prior use does not justify the dramatic CO reductions proposed here. For example, CO was used as an indicator of combustion efficiency as part of the Interim Status rule for Boilers and Industrial Furnaces (BIFs) that burn hazardous waste. At the time, EPA's research demonstrated that BIF units with CO emissions less than 100 ppmvd were achieving the desired destruction efficiency of the hazardous organics in the waste streams. As mentioned previously, because the chemical kinetics make CO far more difficult to oxidize than other organic compounds, it is not necessary to drive CO emissions to low levels or to zero to obtain a corresponding minimization of organic emissions.

The data used to support the BIF Interim Status rule documented how the selected level of CO corresponded to minimal emissions of the target compounds. That should be the case for these boiler rules as well. It is not logical to apply the same rules for HAPs to establish a CO floor, when CO is merely the surrogate.

Furthermore, the CO data used to establish the floor may not be representative of normal boiler operation and a low CO limit may not be achievable at all times even by the best performers. Some boilers only produce measurable CO emissions when they are experiencing load variations. The testing that is being used to establish the CO limits was all conducted at steady load. A boiler may have small CO emissions at steady load, but significant emissions as the load varies.

EPA Method 10 was reviewed to assess the potential accuracy of the CO emissions data that were included in the floor calculation. If the primary purpose of the testing was to measure CO emissions for compliance purposes, one would expect that a diligent stack tester, seeing minimal CO emissions, might settle on a span of 50 ppm CO for the actual compliance test, the data from which would then have an absolute accuracy of +/- 1 ppm ($50\text{ppm} * 2\%$, ignoring the stated M10 accuracy of NDIR analyzers of +/-5% of calibrated span). If the span gas is higher than 50 ppm, the expected accuracy would be greater than +/- 1 ppm. That level of accuracy is very different from the appearance of the data that is presented in the area source floor memo, where CO values are reported out to 3 significant figures at levels sometimes less than 1 ppm. This is a misrepresentation of the accuracy of the test method.

It is inappropriate to set daily average CO limits that must be met at all times on 3-run stack tests that were likely conducted near full load conditions and at steady state operation. This method of establishing a standard does not take into account the variability of CO emissions over operating loads. Even EPA acknowledges this fact in the proposed Boiler MACT preamble at 75 Fed. Reg. 32021: "We believe that single short term stack test data (typically a few hours) are probably not indicative of long term emissions performance, and so are not the best indicators of

performance over time.” If EPA is going to require CO CEMS as the compliance method as it proposes for units >100MMBtu/hr, the Agency should utilize CO CEMS data to set the standard.

If CO CEMS are required in the final rule, ACC supports the proposed CO CEMS data averaging approach in 40 CFR 63.11223(e)(6) wherein data must not be used during periods of monitoring malfunction, associated repairs, out-of-control periods, required QA or control activities, or when the boiler is operating at less than 50% of rated capacity. As indicated above, operation at less than 50% load results in inherently increased CO emissions. When fuel input is low, as during periods of startup and shutdown, oxygen levels are higher, making the corrected pollutant concentrations much higher. 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). This approach of excluding CO CEMS data below 50% of rated capacity should also be included in the major source Boiler/Process Heater MACT rule, Subpart DDDDD, and it is curious why this is not the case. In fact, the 2004 Boiler rule recognized that CO emissions could be higher at low loads by not requiring CO CEMS data obtained at less than 50 percent of maximum load be included in the 30-day CO average.

EPA does not have long term CO CEMS data for oil fired boilers in support of this rule or for the proposed Boiler MACT rule. This is a major omission, since liquid fired boilers present additional complexity over load range due to fuel atomization requirements. Lower firing rates decrease velocities through oil atomizers and fuel/atomizing steam or air pressures typically are lower at low firing rates. Fuel atomization, as well as fuel/air mixing variations over load, contribute to increased CO emissions over the firing rate. Reference the following chart showing O₂ and CO measured with a portable analyzer for a watertube boiler retrofit with a new Low NO_x Burner installed in 2006 firing low sulfur No.6 Oil. The key point is the variation in CO over load for a well-tuned boiler as well as the considerably higher CO emission rate than proposed. Recognize there is no reasonable method to reduce CO without negatively impacting unit efficiency (increasing excess air) and even then there is no assurance the proposed limit can ever be reached. In this example, 0% firing rate is for the unit operating at minimum fire condition.

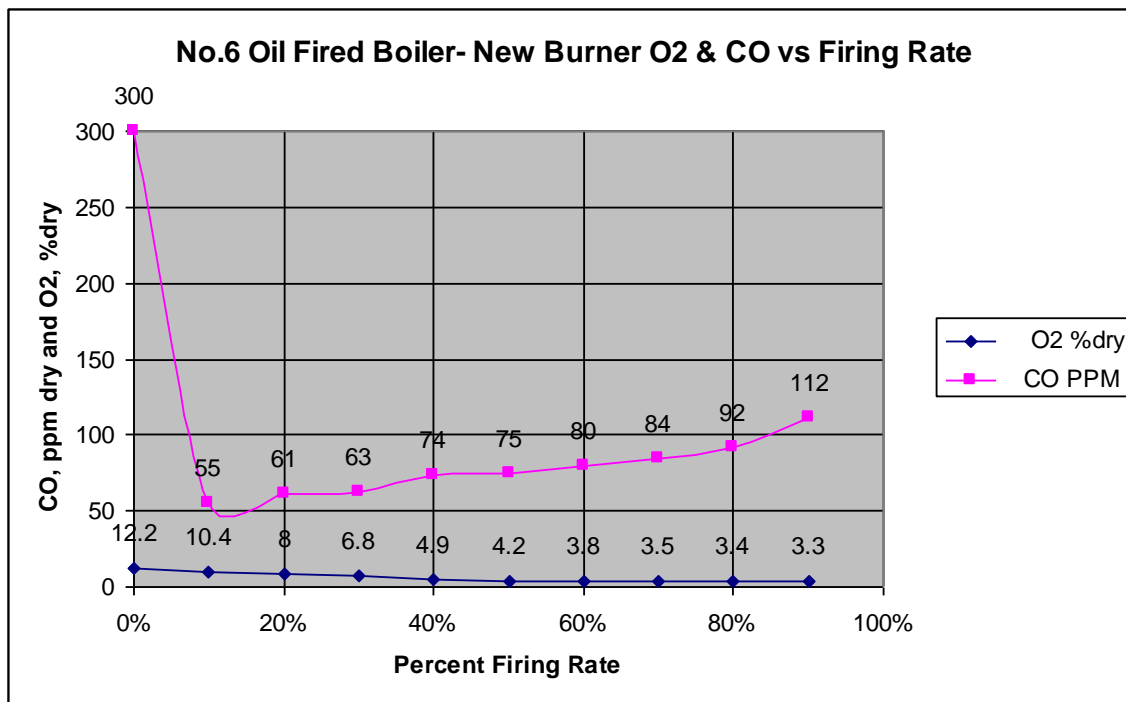


Figure 1

If CO limits are imposed in the final rule, for those units which are not required to use CO CEMS, ACC recommends that the CO limit be based on the average of 3 test runs using M10 with the boiler operating between 80-100% of rated heat input, with appropriate latitude to account for the diverse population of boilers, burners, atomization systems, and applications. As such, the basis for the standard would also change from the current daily average basis for those units. As proposed, units without CO CEMS would appear to need to conduct a 24 hour M10 emission test in order to determine compliance, which appears at odds with at least 1-hour sampling time for each test run stated in §63.11212(d).

EPA should re-evaluate its proposed CO limits for liquid-fired units to ensure the limits represent what is generally achievable by the population of liquid-fired units. If units with low NO_x limits are forced to meet CO limits of 2 ppm, an oxidation catalyst could be required, which is a very costly control option and may oxidize CO but not organic HAP, depending on the temperature of the gas stream at the location of the catalyst, which will necessarily vary with boiler firing rate.

B. The Coal Mercury Limits May Not Be Achievable With The Controls EPA Has Assumed.

EPA has inappropriately developed a coal boiler mercury emission limit using very limited data and has not collected any fuel variability data to supplement its analysis. EPA has assumed that fabric filters will be adequate to meet the proposed limit. However, sources could be burning coal with sufficiently variable mercury content to make carbon injection necessary as a control measure, which would increase the cost of compliance. EPA only gathered mercury emissions data from 9 coal boilers out of the estimated 3,710 that will be regulated by this rule and they

have gathered no fuel variability data for these boilers. An analysis of EPA's database for boilers at major sources²⁷ shows that there are over 100 boilers in the coal subcategory with emissions greater than the proposed area source limit of 3E-06 lb Hg/MMBtu and over 40 of these units are equipped with fabric filters. As EPA has acknowledged that mercury is a fuel-based HAP, it is reasonable to assume that there are also coal-fired boilers at area sources that will not meet the proposed mercury limits with a fabric filter alone. Therefore, if EPA retains a numerical emission limit for mercury under this rule, the appropriate requirement for GACT should be re-evaluated, taking coal mercury content variability across the entire USA and generally available controls into account. Additional subcategorization based on fuel type may also be appropriate depending on the approach taken.

VIII. New Source Limits

Similar to the discussion above, we do not believe that the 1 ppm CO limit for new oil-fired boilers is generally achievable. Additionally, it is not a limit that burner manufacturers will guarantee, nor is it consistent with what states require as BACT. EPA should re-evaluate the proposed new source CO limits for oil-fired boilers and revise accordingly to ensure that they are generally achievable. We also reiterate our point above that the new source limits for mercury for coal-fired boilers should take fuel variability into account in order to accommodate regional fuel supplies and not restrict new boilers to a certain type of coal.

IX. Startup, Shutdown And Malfunction Events

A. EPA's Approach To Addressing SSM Violates The Clean Air Act.

EPA's approach to addressing startup, shutdown, and malfunction (SSM) periods in the proposed rule is contrary to the statute's requirement that the standards established under § 112(d)(2) be "achievable." Furthermore, EPA's claims that the 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 "daily or monthly averages" standards in this area source rule 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 these standards based on CEMS data obtained from major sources pursuant to the proposed MACT standards. 75 Fed. Reg. 31901-02. 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.* 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

²⁷ EPA-HQ-OAR-2002-0058-0789

account in setting CAA section 112(d) standards for area source boilers” given that these episodes are by definition sudden and unexpected events which vary in degree, frequency, and duration. *Id.*

When setting §112(d) standards in the early 1990s, EPA used its New Source Performance Standards (NSPS) program as a model. The §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. 42760, 42777 (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 §112 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 §112, and so §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 §111 NSPS, *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 §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 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. This representation is a serious misstatement of the Agency’s record. As discussed in the following subsection, EPA does not rely on the CEMS data when setting the floors for boilers. Thus, according to EPA’s own docket

materials,²⁸ 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 or management practices for these events for area source boilers.

Section 112(h)(1) of the CAA 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 . . ." 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." Gathering data during a malfunction event would be even more challenging. Moreover, the definition of "not feasible to prescribe or enforce an emission standard" is defined in §112(h)(2) as any situation where "the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations." Startup, shutdown and malfunction episodes fit with this definition and would justify the agency setting work practices to address emissions during these periods.

Alternatively, when establishing emission standards for area sources EPA has the authority to establish "management practices" in lieu of MACT or GACT. Section 112(d)(5) states in pertinent part:

"With respect only to . . . area sources . . . the Administrator may, in lieu of the authorities provided in paragraph (2) and subsection (f) of this section, elect to promulgate standards or requirements . . . which provide for the use of [GACT] or management practices to reduce emissions of [HAP.]"

EPA should use this statutory authority to require management practices to reduce HAP emissions during periods of SSM at area sources.

B. EPA Failed To Consider Emissions During Startups And Shutdowns.

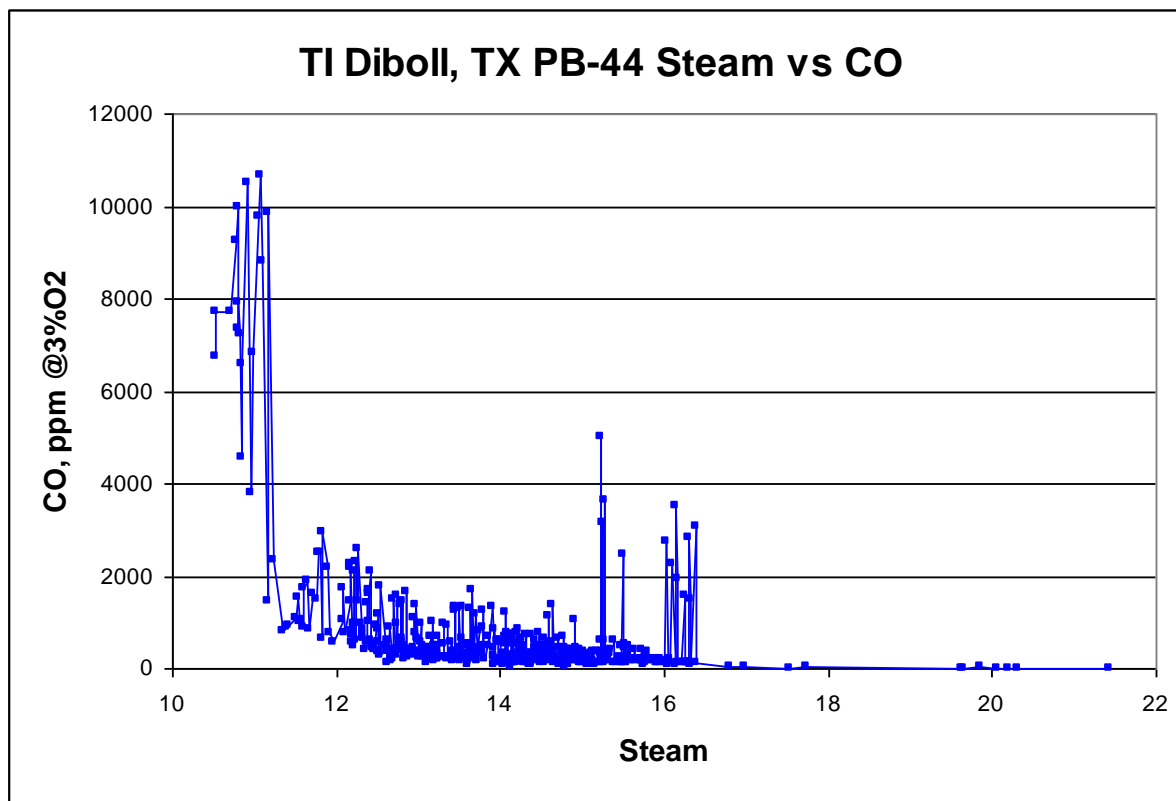
As highlighted above, we do not agree with EPA's statement in the preamble that it has taken startup and shutdown periods into account when setting the proposed standards.²⁹ The data used to set the proposed limits fail to account for the dynamic conditions and variable emissions occurring during startup and shutdown episodes because the limits are being set using data only from stack tests conducted under normal operating conditions. EPA also states that the proposed averaging periods are adequate to cover these periods because the Agency is proposing daily and monthly averages. There are no proposed standards that are based on monthly averages,

²⁸ See e.g., 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).

²⁹ 75 Fed. Reg. 31901

although we recommend that if EPA retains a numerical CO standard and requires CO CEMS for compliance, 30 day rolling averages are appropriate. EPA references data collected under the major source rulemaking that it states indicates “startups and shutdowns will not affect the achievability of the standard.” We respectfully disagree that startups and shutdowns will not affect a unit’s ability to comply with a CO standard.

Examination of the data in the emissions database shows that CO emissions vary with load and can vary quite a bit over a 30-day period. The following graph represents the CO data from biomass boiler PB-44 at Facility TXDibollTemple-Inland plotted against the steam data.



This graph shows that EPA’s statement in the preamble that CO does not vary with load and no adjustment is needed for CO emissions variability for load³⁰ is inaccurate. In fact, the MACT floor memo states that the 2 biomass boilers for which EPA gathered 30-day CO CEMS data show higher CO emissions at lower loads. It is improper to exclude the data for the Domtar Arkansas boiler from the discussion just because it was burning a material that may be defined as “solid waste”; the unit is still operating as a biomass boiler and the data can be used with the Diboll data to show a trend: CO emissions are higher at low loads. Data obtained during periods of SSM also should not be excluded from any analysis of 30-day CO data because EPA has proposed that the CO limit must be met at all times, even during periods of SSM. Therefore, EPA must include and consider any emissions data from these periods, especially from a top performing boiler like the Diboll boiler, in floor setting. This discussion ignores for the moment

³⁰ 75 Fed. Reg. 32024

that ACC strongly recommends that startup, shutdown, and malfunction periods should be addressed through work or management practices, using unit-specific SSM plans to minimize potential HAP emissions during those periods.

It is very common in industry for certain control devices to be out of operation during periods of start-up due to the nature of the equipment. Electrostatic precipitators (ESPs) must typically warm-up to be effective. It is also necessary to establish proper O₂ levels in the flue gas prior to ESP energization to prevent ignition of flammable mixtures in the ESP due to sparking. This practice is necessary to ensure that boilers are started up in a safe manner. Premature starting of this equipment will lead to short term stability problems that could result in unsafe actions and longer term degradation of ESP performance due to fouling, increased chances of wire damage or increased corrosion within the chambers. Vendors providing this equipment make it part of the standard operating procedures.

During periods of startup, combustion starts and as fuel is introduced the boiler and ESP warm up on a designated curve that could last for between 5 and 8 hours. As the boiler and control device heats up, additional fuel is added until the ESP meets its design temperature, the O₂ level is correct, and normal fuel firing then is resumed. During such periods it is likely that emissions will exceed the standards proposed and would never be able to recover to meet the average opacity limitations.

Given the limited carbon monoxide data and total absence of startup and shutdown emissions information for other pollutants from the test run data relied on by EPA to set the proposed standards and the infeasibility, if not impossibility, of collecting data from such brief operation periods for other pollutants, it is appropriate for EPA to set work or management practices for these events for boilers.

Furthermore, a work or management practices approach for these periods would be in keeping with the statute's requirement that standards be "achievable" as well as with the court's requirement that a standard apply at all times.

A work or management practices approach for these periods also would be consistent with EPA's recently promulgated 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.* SSM periods for area source boilers encounter similar testing challenges and costs.

C. Even Top Performers Malfunction.

With regard to malfunctions, EPA states in the preamble to this proposed rule 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.*

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 standards that apply during normal operations. This directly conflicts with the statutory requirement that the standard be “achievable.” EPA has failed to recognize that even best performers will experience malfunctions. It is possible for pollution control equipment to fail in various ways. Electrostatic fields trip, power failures do occur, fabric filters fail, scrubber pumps fail even at best performers and despite the best efforts of companies to prevent and minimize such events. Industry can and does work to minimize such periods, but they do occur. Further, manufacturers of such equipment routinely make emission guarantees for normal operations and although they sometimes oversize equipment to account for some of the variability described above, it is very doubtful that vendors would provide sufficient numerical guarantees for equipment under such situations.

Given that the floor data does not consider malfunctions and that the statute requires that the standards be “achievable,” EPA should establish separate work or management practice requirements using its authority under either §112(h) or §112(d)(5) to address periods of malfunctions.

Emission testing for malfunctions would be near impossible to conduct given the sporadic and unpredictable nature of the events, in addition to the fact that many combustion related malfunctions impose safety risks to onsite personnel and equipment, and potentially off-site. As noted earlier, EPA acknowledges in the preamble 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.³¹ Section 112(h) work practices or §112(d)(5) management practices are well-suited to address malfunction periods given the complexities and challenges surrounding collecting data during these potentially dangerous episodes and establishing numerical standards for those events.

For all of the above reasons, ACC believes that EPA must revisit the SSM issue. ACC suggests that EPA propose work/management practice standards that would allow sources a certain time period for start-up, shutdown and malfunction events and as long as certain procedures are followed, then compliance would be met. Those work/management practice standards should require the development and implementation of an emissions minimization plan that will result in (a) minimizing emissions during such events that would exceed otherwise applicable emission

³¹ 75 Fed. Reg. 31902

limitations, and (b) for malfunctions that will cause the unit to exceed otherwise applicable emission limitations, promptly identifying and implementing measures to remedy the malfunction. While there may be some instances where standard work practices can be identified for a type of source, ACC cautions that overly prescriptive and non-facility-specific requirements can actually be counterproductive, restricting the operators' flexibility in a way that hampers their ability to troubleshoot or respond appropriately to an event, or that compromises safety. The plan should be an evolving document, and should be maintained at the facility and, upon request, be available for review by EPA or the State regulatory authority. Alternatively, EPA could establish a threshold of exceedances, either a number or percentage of operating times that could occur during a quarterly or six month period before a violation occurs. This methodology is consistent with other MACT standards such as 40 CFR 63 Subpart S and MM.

X. Affected Sources and Exemptions

A. EPA Should Exempt Temporary Boilers.

The proposed rule does not include an exemption for temporary boilers. ACC believes the rule should include such an exemption, as the proposed Boiler MACT rule does. Chemical operations periodically use portable/transportable boilers to supply/supplement other site steam supplies. These boilers, which are typically rented and used on a temporary basis, are portable shop-fabricated package design units. They are typically used when there is a mechanical problem that takes a boiler out of service for a period of time to complete repairs or to maintain steam balances during planned unit turnarounds. Because they are used on a limited time basis, portable units are typically not fully integrated with site control systems.

Most portable/transportable boilers are owned by a rental company, not the stationary source. Rental boilers may or may not be operated by the facility owner/operator. These temporary boilers will typically only fire gas or liquid fossil fuels (natural gas or distillate oil) which may be cleaner than the boiler(s) they are temporarily replacing.

Since portable/transportable boilers are required to be used, for a temporary time period, on either an emergency basis or to cover planned unit maintenance downtimes, it is not practical to comply with all of the MACT rule requirements that are more suitable for permanent fixed units. Therefore, we recommend that EPA include an exclusion for temporary boilers in this area source rule similar to the exclusion proposed in the Boiler MACT rule (exclude temporary boilers from the regulation as long as they are onsite for no more than 180 consecutive days).

B. EPA Should Correct The Gap In Coverage Caused By The Proposed Current Definitions Of Biomass And Coal-Fired Boilers.

EPA has proposed definitions for biomass and coal boilers as follows:³²

Biomass subcategory includes any boiler that burns any amount of biomass, but no coal, either alone or in combination with liquid fuels or gaseous fuels.

Coal subcategory includes any boiler that burns any coal alone or at least 10 percent coal on an annual heat input basis in combination with biomass, liquid fuels, or gaseous fuels.

Defining the subcategories in this manner creates a gap in coverage for a boiler that may burn less than 10% coal and more than 90% biomass. Based on the language in the preamble³³, we believe it was EPA's intent to include a 10% coal firing allowance in the biomass subcategory: "The biomass fuel subcategory includes units burning any biomass but not more than 10 percent coal on an annual fuel heat input basis." Therefore, EPA should revise the biomass subcategory definition to be consistent with the Boiler MACT and allow up to 10 percent coal firing.

C. EPA Should Add An Exemption For Water Heaters.

Hot water heaters are exempt from the proposed Boiler MACT rule and also should be exempted from the area source rule. The preamble to the proposed Boiler MACT rule provides the following rationale for exempting hot water heaters:³⁴

"The proposed rule would not regulate hot water heaters, as defined in this proposed rule, because such units are not part of the listed source categories. Many industrial facilities have office buildings located onsite which use hot water heaters. Such hot water heaters, by their design and operation, could be considered boilers since hot water heaters meet the definition of a boiler as specified in the proposed rule, because they are enclosed devices that combust fuel for the purpose of recovery energy to heat water. However, hot water heaters are more appropriately described as residential-type boilers, not industrial, commercial, or institutional boilers because their output (i.e., hot water) is intended for personal use rather than for use in an industrial, commercial, or institutional process. Moreover, since hot water heaters generally are small and use natural gas as fuel, their emissions are negligible compared to the emissions from the industrial operations that make such facilities major sources, and compared to boilers that are used for industrial, commercial, or institutional purposes. However, the primary reason that we are excluding hot water heaters is that hot water heaters are not part of the listed source category."

The ASME Code, Section IV- Rules for Construction of Heating Boilers, is applicable to hot water heating boilers and is, in our opinion, the standard that should be used to define a hot water heater consistent with industry standards. The ASME Code, Section IV is applicable to: "(a) steam boilers for operation at pressures not exceeding 15 psi; (b) hot water heating boilers and

³² 75 Fed. Reg. 31930-31931

³³ 75 Fed. Reg. 31904

³⁴ 75 Fed. Reg. 32016

hot water supply boilers for operating at pressures not exceeding 160 psi and/or temperatures not exceeding 250°F, at or near the boiler outlet."

We recommend EPA specifically exempt hot water heaters from the area source rule and add a definition of hot water heater to read as follows:

Hot water heater means a closed vessel in which water is heated by combustion of gaseous or liquid fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 pounds per square inch gauge (psig), including the apparatus by which the heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 250°F (121°C) at or near the heater outlet.

XI. Averaging Times

A. EPA Should Include Longer Averaging Times For Operating Parameters And CO Emissions.

The industrial boilers that will be subject to this rule may burn more than one type of fuel and may have frequent load swings. Therefore, the emissions from these boilers will vary over the course of a day, depending on the fuel burned and the required steam production. EPA acknowledged during the Phase 2 ICR stack test program that emissions from industrial boilers are variable by requesting multi-year historical stack test data and conducting 30-day fuel and emissions monitoring studies. We believe that additional variability data and CEMS data should be reviewed to support longer averaging times, especially since lengthening averaging times and incorporating variability seems to be EPA's preferred approach for addressing emissions during startups, shutdowns, and malfunction periods. The court reviewing the Brick MACT authorized EPA to look at intra-unit variability and EPA's work on the Hazardous Waste Combustion MACT confirmed the importance of considering variability. The EPA also acknowledged that averaging times longer than 3 hours can be appropriate for compliance with the condensate collection and treatment requirements in Pulp and Paper MACT, Subpart S. Therefore, it is inappropriate for EPA to set limits in this area source boiler rule that cannot be met consistently by a top performing unit under all operating conditions. One way to consider a unit's variability in emissions is to set a longer averaging time for compliance with an emission limit.

Averaging times of longer than 3 hours are needed for industrial boilers, especially those that burn multiple fuels and have varying emissions characteristics, in order to preserve operational flexibility and ensure cost-efficient operation of the boiler. The facility must be able to operate the boiler in a manner that is responsive to process needs, not at full load all the time. Longer averaging periods are also desirable if the emission limits are going to apply at all times, including periods of startup, shutdown, and malfunction. The proposed rule specifies 3-hour averages are to be calculated for operating parameters³⁵, although the preamble states that daily averages should be calculated³⁶. We support daily block averages for CPMS. A 24-hour averaging period acknowledges process variability, lessens the effect of short process upsets on

³⁵ 75 Fed. Reg. 31928

³⁶ 75 Fed. Reg. 31902

compliance, and captures the variable emissions and operating characteristics of a unit over an operating day.

Where a COMS or CO CEMS is used, a daily block average is specified, but EPA should incorporate a 30-day rolling averaging period under this rule, as it has done for CO CEMS in the proposed Boiler MACT rule. There are factors beyond the boiler operator's control that can cause emissions to vary over a period of days and not hours. For example, the weather will impact moisture content of solid fuels, which will affect how the fuels combust over a period of days, not hours. For a biomass boiler, the fuel supply and fuel characteristics could also vary over a period of days because facilities have multiple biomass fuel suppliers providing both green and dry wood. For all types of boilers, the pollutant content of the fuel will vary over a period of days, as evidenced by the range of results obtained during the 30-day fuel sampling required by EPA for many Phase 2 ICR participants. Where CEMS are the compliance method (e.g., CO), we support a 30-day rolling average basis to account for operational and emissions variability.

XII. Monitoring Requirements

A. EPA Should Not Require CEMS Or COMS On Area Source Boilers.

In order to reduce the burden of this rule on area sources, installation of CEMS and COMS should not be required for boilers that do not already operate CEMS or COMS. Area sources may not have the required knowledge or manpower to operate complex continuous monitoring systems on their boilers, so the monitoring requirements should be as simple as possible. Parameter monitoring or visible emissions observations should be sufficient for these small sources to ensure continued proper operation of the boiler and any associated air pollution control equipment.

However, if COMS are required in the final rule, EPA needs to clarify proposed §63.11223(d) to eliminate confusion as to when a COMS is required. We suggest the following revision:

“(c) If you have an applicable opacity operating limit **under this rule**, you must install, operate, certify and maintain each...”

This requirement should only be applicable relative to an opacity limit in this particular rule, not if there is some existing opacity requirement under some other program, such as state rules.

B. Table 3 Should Include Monitoring For Additional Control Devices.

Table 3 includes operating limits for boilers with mercury emission limits. This table should be expanded to also include operating limits for boilers that have PM limits and use control devices to comply with those limits. In addition, some boilers may use wet scrubbers to comply with the mercury and PM emission limits. Therefore, monitoring for wet scrubbers should be included in this table (e.g., monitoring pressure drop and liquid flow rate). EPA should incorporate the monitoring options for additional devices per Table 7 of the proposed Boiler MACT (75 Fed. Reg. 32071).

XIII. Fuel Analysis

A. The Frequency Of Fuel Analyses Should Be Reduced.

For units complying with the proposed mercury emission limits using fuel analysis, EPA proposes to require monthly fuel analyses. In order to reduce the regulatory burden on area sources, we propose reducing the frequency to quarterly fuel analyses. In addition, no fuel sampling should be required in any period if the unit does not operate during the period.³⁷

The proposed Boiler MACT rule includes an exemption for single fuel fired affected sources from the initial compliance requirements for conducting a fuel analysis for each type of fuel in §63.7510(a). This exemption should also be included in this area source rule for coal fired units that have a mercury limit (if that limit remains in the final rule). We also urge EPA to specifically note that for single fuel fired units, the exemption from fuel analysis still applies for coal fired boilers that startup on natural gas or fuel oil, or that are burning process gases in a boiler for emissions control and not for heat value. Where EPA is requiring fuel analyses for multi-fuel boilers for determining fuel operating limits for mercury, EPA should not include gaseous fuels in the fuel testing requirements since collecting samples of these gases is dangerous; concentrations of chlorine and mercury in gaseous fuels will be very small; and these concentrations have virtually no effect on the total amount of mercury and chlorine being input to the boiler.

B. Technical Edits Are Needed On Table 5.

The text prior to Table 5 on fuel analysis states that the requirements in Table 5 apply to *new* units. These requirements also should apply to *existing* coal-fired units using fuel analysis to comply with the proposed mercury limit.

XIV. Testing Requirements

A. Technical Edits Are Needed On Table 4.

There are a few technical edits necessary on Table 4. First, Item 3.f should be deleted. The CO emission limits are in ppm so facilities do not need to convert tested CO emissions to lb/MMBtu. Second, existing coal units may have to do stack testing to show compliance with the Hg limit; however, the text immediately preceding Table 4 says it applies to new units. The text should indicate that the testing procedures apply to new and existing units.

B. EPA Should Remove The Requirement To Be 75% Of The Limit To Be Eligible For Reduced Stack Testing Frequency And Should Require Less Frequent Testing.

EPA should remove the requirement in proposed §63.11214 that a unit must test below 75% of the applicable limit to qualify for a reduced testing frequency. EPA has not justified this

³⁷ 63.11214(f) at 75 Fed. Reg. 31927

restriction. The proposed rule requires continuous monitoring of operating parameters and fuel input that are meant to provide an ongoing assurance of compliance with the emission limits. As long as the facility continues to operate in a similar mode following the initial performance test and maintains operating parameters and fuel inputs within the established operating ranges, annual stack testing for all pollutants is not necessary. For area source boilers, we believe that it would be appropriate for EPA to require stack testing once every 5 years, as emissions from these boilers are small, the monitoring required by the rule will provide a reasonable assurance of compliance with the emission limits, and allowing a reduced testing frequency will reduce the cost of the rule. The reduced frequency for testing should be allowed for PM, mercury, and CO. As stated previously, we believe a more appropriate regulatory approach for CO emissions from area sources is work practice standards, rather than ongoing testing and monitoring.

C. Facilities Should Be Able To Test One Unit If It Is Representative Of Multiple Units At A Facility.

Another measure that would reduce the cost of complying with this rule would be to allow facilities to group like units and test one representative boiler instead of requiring them to test each and every boiler at the facility. For example, if a facility has multiple 25 MMBtu/hr boilers that are of the same design and fire the same fuel, they should be able to test one of these boilers to represent emissions of the rest of the group. The periodic testing could “rotate” among the boilers in the group. This option would reduce the cost associated with emissions testing for facilities with many similar boilers.

D. EPA Should Explain The Discrepancies Between The Sampling Time Requirements Of This Rule And The Proposed Boiler MACT Rule.

The proposed area source rule requires a minimum 1-hour sampling time for PM and 2-hour sampling time for mercury stack testing.³⁸ The proposed Boiler MACT rule requires a minimum 4-hour sampling time for all compounds.³⁹ We agree that the proposed sampling times in the area source rule are adequate and EPA should provide justification for requiring longer sampling times.

XV. Tune-Up Requirements

A. Tune-Up Requirements Are Inappropriate And Need To Be Modified.

Proposed §63.11222(b) contains the specific tune-up work practice requirements for existing boilers subject to work practice and management practice standards. We have the following comments on the specifics of the proposed tune-up work practice

ACC believes proposed §63.11222(b)(1)-(3) reflect typical boiler inspection and tune-up activities. Proposed §63.11222(b)(3) requires the area source to “Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly.” This wording presumes an automatic air-to-fuel ratio controller, but those may or may not be present.

³⁸ Proposed §63.11212 at 75 Fed. Reg. 31926

³⁹ Proposed §63.7520 at 75 Fed. Reg. 32052

Where metered fuel/air control systems with O₂ trim are installed, there is no real need for periodic “tune-ups” since combustion is continually optimized. Rather, burner/combustion system inspections, control equipment calibrations, and operational checks are all that should be needed to verify proper operation. EPA should reword the work practice requirements so that sources have flexibility to adapt procedures as most applicable and appropriate for specific sources.

Proposed §63.11222(b)(4) and (5) are not typical tune-up requirements for boilers and do not reflect GACT. States that have tune-up requirements require minimization of NO_x, not CO. Thus, these subparagraphs do not reflect the state requirements and would violate the state tune-up requirements for minimizing NO_x, because as CO decreases, NO_x increases. Additionally, the tune-up requirement conflicts with the proposed energy assessment work practice requirements, because tuning a boiler for minimum CO generally requires increasing excess air, which increases energy consumption, in direct conflict with the energy assessment directive to decrease energy consumption.

If the fuel/air control on a boiler is working properly, as (b)(3) confirms, and there are no mechanical problems with the flame pattern (in cases where it is visible), as (b)(2) confirms, there is little latitude to adjust for CO. These CO minimization and measurement requirements must be justified in consideration of the NO_x emissions increase they will engender and the rule must specifically override state requirements to minimize NO_x, or be modified as indicated below.

The O₂ level in a boiler also must be set considering draft limitations, flame impingement, and flame stability to assure a safe, reliable and efficient operation, and these conditions are not recognized in the EPA tune-up procedure.

If burner/control adjustment relative to CO emissions is maintained in the tune-up procedure, changes are needed (1) to EPA’s description of this work practice, (2) to the Agency cost and burden estimate, (3) to make the CO adjustment practical, and (4) not to have it result in increased emissions of NO_x and other pollutants.

1. The regulatory language should make clear that the CO is only to be minimized to the extent the adjustments do not increase NO_x emissions, decrease unit combustion efficiency, cause flame impingement or flame instability, or cause other safety issues, and that portable CO and O₂ analyzers are acceptable, and that these tests are not performance tests.
2. For a short term adjustment situation, unit firing and stack conditions will not change enough for the stack moisture to vary significantly. Comparing CO measurements on either a wet or dry basis, before and after adjustment, is more than adequate to reflect the impact of adjustments.
3. EPA should specify that the oxygen measurement should be based on either an O₂ CEMS reading (if the unit has one), or the use of a portable emissions monitor. It should be made clear that a Method 3 oxygen measurement is not required.

4. Flexibility should be provided to apply specific steps as appropriate for the particular unit.

In addition, proposed §63.11222(b)(6)(iii) requires maintaining an annual report to include the type and amount of fuel used over the 12 months prior to the annual adjustment. There are two issues with this requirement:

- First, this rule stipulates biennial tune-ups for specific affected sources, not annual.
- Second, this implies that fuel metering is required for every boiler subject to tune-up requirements. There is no justification for a requirement to have individual boiler fuel use meters or other data since actual fuel use for a boiler is immaterial for documentation of a tune-up. The only requirement should be for identification of the fuel type used in the boiler over the prior operating period and the fuel type used during the tune-up. If EPA can justify a requirement for the source to determine the quantity of fuel combusted, it should be sufficient for the source to use available data such as from billing records, delivery receipts, tank level drop, common fuel meter, or other data to determine that quantity.

B. Tune-Up Definition Issues

The definition of “tune-up” is provided in §63.11237. It correctly focuses on the need to “optimize the combustion efficiency,” whereas proposed §11222(b)(4) requires the source to “minimize total emissions of CO,” which as noted above is an incorrect approach to a tune-up and will lead to lower efficiency and higher net total emissions. As stated above, EPA needs to correct the language in §11222.

The “tune-up” definition also implies that use of an approved specialist could be required. EPA needs to recognize that many companies have in-house experts who are trained and well qualified to perform adjustments to burner systems and already do so. Continued use of in-house resources should be supported.

XVI. Energy Assessment Requirements

A. The Proposed Definition Of Energy Assessment Is Too Broad And Is Inconsistent With Other Sections Of The Proposed Rule.

For area sources with an affected boiler with heat input of 10 MM Btu/hr or greater, EPA has proposed as beyond-the-floor control technology an "energy assessment," characterized in the preamble as an "in-depth energy study identifying all energy conservation measures appropriate for a facility given its operating parameters." 75 Fed. Reg. at 31896.

Proposed §63.11237 defines an energy assessment as an “in-depth assessment of a facility to identify immediate and long-term opportunities to save energy, focusing on the stream and process heating systems which involves a thorough examination of potential savings from energy

efficiency improvements, waste minimization and pollution prevention, and productivity improvement.”

The definition is too broad because this proposed rule regulates *boilers* only, it does not include process heaters, and it appears to establish obligations beyond the boiler source. The definition requires the assessment to consider waste minimization, pollution prevention and productivity improvements independent of their impact on facility energy considerations. This definition seems to require facilities to look beyond “air” and into other media such as solid waste and water consumption, which is beyond the scope of this air rule.

EPA proposes to require all owners or operators of affected boiler with heat input of 10 MM Btu/hr or greater to submit documentation that an energy assessment was performed, by qualified personnel, and the cost-effective energy conservations measures were identified. *Id.* at 31929. EPA proposes a number of procedures for the energy assessment, including not only visual inspection of the boiler itself (*i.e.*, the regulated source) but also the "boiler system," and an extensive assessment of the "major energy consuming systems" (*i.e.*, unregulated sources and non-sources at the facility), including a review of "available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage." *Id.* at 31932. Under EPA's proposal, regulated entities would be required to subject not only the affected source itself, but also other non-covered units at major source location of the covered source to an examination by a third party. The proposed rule further requires the submission of a "comprehensive report." *Id.* at 31933.

To further complicate matters, EPA also addresses the requirements of an energy assessment in Table 2 of the proposed rule entitled “Work Practice Standards, Emission Reduction Measures, and Management Practices.” Table 2 does not use the same language or incorporate the breadth of the proposed definition in §63.11237 which creates ambiguity, inconsistencies and confusion for the facility.

B. The Assessment Covers Units That Are Not Commercial Boiler “Affected Sources.”

EPA's authority under §112 is to establish HAP emission standards for industrial, commercial and institutional *boilers* (ICI boilers). By its own terms, the rule covers “affected sources” defined as all existing and new *ICI boilers* located at area sources. The “affected source” regulated by this NESHAP is the specified emission unit – the boiler – not the facility where the emission unit is located.⁴⁰ 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. 12408, 12412-13 (March 16, 1994).

⁴⁰ 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(a)(3); 42 U.S.C. §7411(a)(3).

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 affected units for this rule is covered separately by another NESHAP. The statutory scheme does not assign duplicative source category regulations for the same unit.

Since 1992, the sources to be regulated relevant to this rule have been "industrial boilers" and "commercial/institutional boilers." 57 Fed. Reg. 31591. 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 boiler is "a boiler used in commercial establishments such as hotels, restaurants, and laundries to provide electricity, steam, and/or hot water." 75 Fed. Reg. 31931.

However, EPA's proposal extends well beyond regulation of "sources" and compels regulated entities to investigate, monitor and report activity at facilities unregulated by §112 or even by the Clean Air Act. 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 control system, and energy consuming systems." *Id.* The proposal further requires sources to consider, *inter alia*, the "operating characteristics of the facility, energy system specifications, operating and maintenance procedures, and unusual operating constraints. . .;" "major energy consuming systems;" "available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage. . .;" and to identify "major energy conservation measures." *Id.* at 31931 - 33. EPA's authority is limited to setting emission limits for the affected source as defined in the rule and does not extend to the energy using process areas that its proposed assessment clearly contemplates. What EPA requires goes far beyond the affected source, and covers systems beyond the boiler and systems not directly associated with the combustion unit. EPA is not entitled to read into the statute a roving mandate to review any possible unit, system, or opportunity to reduce energy consumption.

Energy usage within most manufacturing facilities is directly and inextricably related to the processes being used and the qualities of the specific products being produced. The sweeping language EPA has proposed to modify manufacturing processes out of concern for HAP and non-HAP emissions would grant EPA the authority to redesign proprietary and confidential manufacturing systems at industrial sites across the country. This would require many, if not most, industrial facilities to grant third-party auditors and EPA access to highly Confidential Business Information (CBI). Giving EPA the authority to mandate changes to manufacturing processes would put at risk competitive advantages that many manufacturers have secured for their products through careful technical and commercial analysis. Neither third-party auditors nor EPA fully understand the myriad technical and commercial analyses developed over years, or in some cases decades, by companies to optimize energy consumption, product performance and quality, and safety. This would paradoxically create a regulatory vehicle that would allow EPA the authority to mandate changes in energy-consuming manufacturing processes without

first developing the in-house expertise to understand the full breadth of the processes, and with it the impact of potential changes to the safety of employees, competitive advantage of the product, or upstream and downstream processing activities at integrated sites.

C. The Assessment Is Not An "Emission Standard."

Section 112(c)(2) requires EPA to establish "*emission standards*" for each listed source category and subcategory. 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(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 §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.

Id. at 31907 (citing 42 U.S.C. §7412(d)(2)). EPA posits that "process changes, substitution of materials or other modifications" encompasses "energy assessments." However, when the statute refers to "process changes, substitution of materials or other modifications" it can only be referring to the source "to which such emission standard applies." §112(d)(2). And it can only apply to methods to achieve the emission standards.

Yet EPA's proposal extends well beyond reduction of emissions by "sources" and seeks to compel regulated entities to investigate, monitor and report activity at facilities unregulated by the Clean Air Act. The proposal requires sources to consider, inter alia, the "operating characteristics of the facility, energy system specifications, operating and maintenance procedures, and unusual operating constraints. . .;" "major energy consuming systems;" "available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage. . .;" and "major energy conservation measures." *Id.* at 31932 - 33. As defined in the rule, the energy assessment would require "a thorough examination" of a site far beyond the §112 affected source: "Energy assessment means an in-depth assessment of a facility to identify immediate and long-term opportunities to save energy, focusing on the steam and process heating systems which involves a thorough examination of potential savings from energy efficiency improvements, waste minimization and pollution prevention, and productivity improvement." *Id.* at 31931. 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.

Moreover, EPA improperly identifies the energy assessment as a beyond-the-floor standard. This is not consistent with the text of the CAA, which as EPA explains, requires it to consider control options that are "more stringent" than the MACT floor. *Id.* at 31905. An energy assessment does not purport to limit emissions, nor impose more stringent standards than the MACT floor.

EPA has developed MACT standards that allow 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. In this area source rule, EPA defines this as a beyond-the-floor MACT standard, making it not only mandatory, but also grounding it in the notion that sources can and must achieve increased emission reductions by its greater stringency than the floor. 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.

In another section of this proposed rule, EPA identifies the energy assessment as a "work practice" standard, including it in Table 2. Authority to require work practice standards derives from §112(h), and EPA does not provide any legal justification for the energy assessment as a "work practice." Its inclusion in Table 2 appears to be in error, but in any event, EPA lacks statutory authority to require this beyond-the-floor energy assessment as proposed under any provision of the CAA.

D. The Assessment Is Arbitrary Because It Lacks A Relationship To HAP Reduction, And EPA Provides No Demonstration Of Such A Relationship.

As already noted above, 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." *Id.* at 31907. The problem with this assertion is that in many cases it is 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 HAP emissions.

Reduced energy does not necessarily mean reduced pollutant emissions, even if it means reduced HAP emissions from the boiler. To offer one countervailing example: periodic operation of solid and liquid fuel boilers in a highly turned down mode is common among many industrial sectors, as an efficient way to manage manufacturing process energy needs and maintain steam

reliability. For example, industrial boilers 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 and liquid 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 boiler, *but not necessarily all those present.*” 75 Fed. Reg. 31907.

Linking energy assessments to finite HAP limits implies that the Energy Intensity (EI) of the processes served by the boiler is a static quantity and that the incremental improvement brought about by the implementation of opportunities discovered by the energy assessments would therefore incrementally reduce HAPs emissions. This could not be more incorrect. The EI of a facility depends on many constantly changing factors, including environmental conditions, raw material quality, product output, and others. Further, facilities may have hundreds of different products that are produced in ever-changing combinations. These products may have individual EIs that are orders of magnitude different. Thus product mix only further complicates the already dynamic nature of a facility EI. Further, a specific energy improvement opportunity may only affect the production of one specific product or may only apply during certain environmental conditions, and thus its effect would be affected by the same dynamic factors as the overall EI.

EPA has not proposed this concept in any other NESHAP for any other regulated sector, nor should it. Boilers provide a single product—heat—to a tremendous number of consumers in hundreds of different contexts. The product consumed is often in some proximity to the boiler itself, which makes it conceptually appealing for EPA to imagine the efficacy of the “energy assessment.” But certainly EPA would never impose such a requirement on other sectors regulated under §112, because the irrationality of the proposal would be highlighted. For example, we doubt that EPA would propose that entities owning surfacing coating facilities for metal furniture (40 C.F.R. 60.310 *et seq.*) review their “demand” for such surface coating. EPA has promulgated MACT standards for five different sources common to the phosphate fertilizer industry (40 C.F.R. Subpart T through Subpart X) but would never demand that the phosphate fertilizer industry identify a “more efficient” phosphate fertilizer. Yet less demand for surface coating for metal furniture, and less demand for the chemicals produced by sources regulated

under Subparts T through X, would according to EPA's logic reduce the demand for the products produced by sources regulated under §112, thereby limiting inputs and reducing HAP outputs. EPA has arbitrarily picked one product out of the thousands produced by sources regulated under §112 and demanded that regulated entities identify ways to make less of it.

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, will reduce HAP reductions. EPA admits as much in the proposal, offering unsubstantiated projections of possible reductions as support:

If a facility elected to implement the cost-effective energy conservation measures identified in the energy assessment, it would potentially result in greater mercury and POM reduction than achieved by a boiler tune-up alone.

75 Fed. Reg. at 31907 (emphasis added).

E. Any Possible Energy And Cost Savings From The Energy Assessments Cannot Be Projected Reliably, Yet EPA Presumes Such Savings.

EPA presumes HAP reductions and energy and energy-related cost savings from implemented energy assessments *Id.* 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 project with any accuracy the ability of area source boilers to cost-effectively undertake energy efficiency measures, much less their resulting emission impacts, cost, or other factors that the CAA requires be included in that analysis. The complete absence of data makes any such presumptions absurd.

EPA makes an unsupported assertion that "the costs of any energy conservation improvement will be offset by the cost savings in lower fuel costs." *Id.* 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 nothing in the record to substantiate 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 does EPA explain what provision in §112(d) or elsewhere in the Act grants EPA the authority to mandate investment criteria for projects implemented pursuant to the energy assessments.

F. EPA Has No Authority To Compel 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 31907. EPA need not determine the economic feasibility of their implementation, because EPA has no authority to compel sources to implement the findings.

No provision of the CAA provides EPA with the authority to compel energy efficiency reductions at a regulated source. 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, given that the assessment is intended to identify "major" energy conservation measures. EPA has no authority to compel implementation of measures that would trigger 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 doing so 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.

G. EPA Must Consider All Of The Potential Impacts That Could Occur At The Facility As A Result Of The Energy Assessment.

For any beyond-the-floor requirement, §112(d)(2) requires EPA to analyze cost, non-air quality health and environmental impacts and energy requirements. EPA proposes that an energy assessment be undertaken as a beyond-the-floor requirement, 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 \$2,500 - \$55,000, depending on the size of the facility. 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 the Department of Energy (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.

H. The Proposed Work Practice Standards Are Vague, Potentially Duplicative Of Actions Already Taken and Burdensome.

Table 2 of the proposed rule includes a list of 7 practices that any existing coal, oil, biomass or oil fired boiler with heat input capacity of 10 MMBtu/hr and greater located at an area source facility must undertake using qualified personnel:

- (1) a visual inspection of the boiler system;
- (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) a review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage;
- (5) a list of major energy conservation measures;
- (6) the energy savings potential of the energy conservation measures identified; and
- (7) a comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

Over the years, ACC member companies have spent millions of dollars performing facility assessments and establishing energy management systems. EPA should not require these facilities to redo, under an EPA process, comprehensive assessments that were already done in a manner consistent with the energy assessment that EPA is proposing in this rulemaking.

Furthermore, some of EPA's requirements are vague, e.g., conduct a visual inspection of the boiler system. What is the scope of the visual inspection? How does it contribute to an energy assessment? If EPA finalizes any inspection requirement, the scope of the inspection should be on the boiler equipment in the affected source---- not the "boiler system" as defined in the proposed rule. As noted in our comments on the scope of the energy assessment and management system, EPA should only establish requirements for the affected source.

EPA is proposing to require facilities to establish operating characteristics of the facility, energy system specifications, operating and maintenance procedures, and unusual operating constraints. Establishing target operating ranges and system specifications are an appropriate part of an energy management assessment and management system but they should be viewed as targets, not enforceable operating limits. We are concerned that some permitting agencies may view these requirements as enforceable limits which would result in constrained operations or, more likely, facilities would have to define a very broad range of operating parameters in order to establish compliance margins. This would partially defeat the intent of developing energy management systems. EPA should clarify that parameters established as operating characteristics, system specifications, and operating/maintenance procedures are not enforceable limits.

As written, requirement (2) is an open-ended and goes beyond energy management. In addition, for smaller facilities, this level of detail is not needed. The scope of any requirements should be dictated by the size and complexity of the regulated entity. EPA should clarify that the scope of

requirement (2) includes only key parameters or procedures that relate to an energy assessment and management as appropriate for that facility.

EPA is proposing in (3) to require facilities to identify major energy consuming items. Again, the requirement is open-ended and goes beyond the affected source of this proposed rule. The scope should be clarified and narrowed to include only energy-related systems within the affected source.

EPA is proposing in (4) to require a review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage. At most, such a review should be limited to equipment in the affected source. We recommend EPA clarify that the scope is for the affected source and that the review is energy-related only.

EPA is proposing in (5) to require a list of major energy conservation measures. Any energy assessment needs to identify potential operating, maintenance or investment energy efficiency steps. The word “major” is important in that there is an endless list of potential steps that could be implemented and it would be inappropriate for sites to list “all” steps because many are ruled out immediately as impractical. For example, raising the thermostat to 95 degrees in the summer is a conservation measure, but not practical for a functioning work force.

EPA proposes in (7) to require a comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments. As written this is overly prescriptive. An energy assessment is just the first step in an energy management system and, for example, developing comprehensive cost information may require significant effort to scope our projects and develop the associated cost estimate. And cost isn't the only criterion to be used as a comparison to energy reduction benefit. For example, safety and reliability are key determinants in what operating/investment steps are taken at a facility. EPA should streamline this requirement to: “a summary report outlining major energy efficiency opportunities.”

I. The Energy Assessments Will Compromise Confidential Business Information.

The proposed rule in relevant part defines an energy assessment, or audit, as an in-depth energy study identifying all energy conservation measures appropriate for a facility given its operating parameters. An energy assessment refers to a process which involves a thorough examination of potential savings from energy efficiency improvements, pollution prevention, and productivity improvement. The 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. EPA is proposing that the energy assessment be conducted by energy professionals and/or engineers that have expertise that cover all energy using systems, processes, and equipment.

EPA's proposal for beyond-the-floor controls includes a mandatory in-depth energy assessment of facilities to identify opportunities to improve energy efficiency will unreasonably compromise Confidential Business Information (CBI) and should not be included in the final rule. Many

industrial manufacturing facilities derive a significant competitive advantage from proprietary and confidential technologies and processes that are unique and specific to the company. These confidential technologies are regarded as CBI and are in many cases restricted to only a select few within the company. Many CBI-derived technologies and process designs have a direct influence on how energy is used and integrated, how waste heat is recovered, and how byproducts and emissions are minimized. The amount and importance of CBI-derived technologies increases at large integrated facilities, such as chemical or petroleum processing plants.

While energy auditors may possess some expertise in energy systems thanks to their energy and/or engineering background and experience, a general background in energy systems is not adequate to analyze a complex manufacturing process or an integrated plant. An auditor would necessarily require extensive education about the intricacies of how a specific manufacturing facility uses, integrates, and recovers energy in order produce an assessment with any discernable value. Energy assessments conducted by the Department of Energy have been conducted at the request of the host company, and involve a limited number of personnel with carefully considered procedures to manage the sharing of CBI and information about CBI-derived technologies. EPA proposes to mandate that all companies engage in energy assessments with third party assessors and that EPA be provided a “comprehensive” report, which would require the disclosure of a significant amount of CBI to auditors. This mandate would place every company’s competitive advantage at risk by disclosing CBI and information about CBI-derived technologies to third party auditors.

J. The Energy Assessment Should Allow Options for Self-Assessment and Self-Certification.

The proposed rule in relevant part would require that the energy assessment be conducted by energy professionals and/or engineers that have expertise that cover all energy using systems, processes, and equipment. EPA is proposing that a qualified individual is someone who has successfully completed the DOE’s Qualified Specialist Program for all systems or a professional engineer certified as a Certified Energy Manager by the Association of Energy Engineers.

EPA’s position that third-party energy professionals and/or engineers that possess certain external certification(s) are the only auditors with the sufficient skill necessary to provide a competent energy audit is inaccurate and objectionable. Many industrial manufacturing processes are complex and unique to a particular company or site. These complex and unique processes have evolved over the span of years or decades of experience, innovation, and specific confidential process knowledge. It often takes talented personnel years or decades of site-specific and process-specific experience to achieve expert status within a complex integrated manufacturing site by virtue of their knowledge of the specific manufacturing processes and equipment. Reliance upon third-party auditors to assess these large integrated sites, which are often among the largest consumers of energy, will not consistently generate insightful and actionable results. It is also problematic to attempt to define at what level of complexity a plant or manufacturing site would cease to be beyond the capabilities of a third-party auditor. Therefore, EPA should include self-assessment by company personnel as a fully acceptable

method of conducting an energy audit. This should be allowed in all cases and at all facilities impacted by this rule.

Requiring specific accreditation as described in the proposed rule would unnecessarily limit the available pool of qualified assessors, resulting in potential shortages and the potential for significant cost escalation. Such a third-party energy professional accreditation requirement would also leave out a vast population of competent and qualified personnel that may be of equal, if not higher, qualification to audit energy systems. For example, many talented collegiate professors engaged in research, education and extension in the field of energy and energy-related engineering consult with industrial, commercial and institutional sites on energy efficiency without energy-specific accreditation. Their advanced degrees, professional engineering licenses, fields of research, blend of academic and manufacturing experience, and/or extension activities qualifies them to provide insightful and actionable recommendations despite lacking a standardized energy efficiency certificate.

A review of the Certified Energy Manager (CEM) certification requirements indicates that they are oriented towards commercial building reviews (e.g., HVAC, electrical, motors and drives, building envelope, green buildings, lighting). Someone with a CEM certificate would not be qualified to review chemical facility operations. Our processes and equipment are specific to our industry and not generally covered by generic certified energy manager courses or online evaluation tools.

Facilities should have the flexibility and discretion to identify qualified and competent assessors by evaluating experience, track record of results, experience within specific industry or process areas, and accreditation. EPA should eliminate any and all references to specific accreditation requirements in this rule.

K. The Energy Assessment Is Presented As Both A Beyond The Floor Requirement And A Work Practice Standard.

The proposed rule refers to the energy assessment requirements as a beyond-the-floor control technology and a “work practice standard, emission reduction measure, and management practice.” In the proposed rule EPA states that “we believe that an energy assessment is an appropriate beyond-the-floor control technology because it is one of the measures identified in CAA section 112(d)(2).” But in Table 2, EPA proposes “work practice standards, emission reduction measures, and management practices” requirements, which include doing an energy assessment. In the preamble, EPA has described, though not properly justified, energy assessments as a beyond-the-floor option, meaning a control option more stringent than the MACT floor that could achieve greater emissions reductions. On the other hand, EPA seems to rely on §112(h)’s authority to establish the energy assessments as work practices, as an alternative to an emission standard when it is not feasible to prescribe or enforce an emission standard. Lastly, though not mentioned by EPA in the proposed rule, we note that §112(d)(5) allows EPA to establish “management practices” for area sources in lieu of requiring MACT or GACT standards. We are unclear which section of the CAA EPA is relying on in its proposal to require energy assessments and EPA needs to clarify this issue.

XVII. Definitions

A. Gas Fired Boilers Should Include Boilers Burning Liquid During Periods Of Gas Curtailment And Boilers That Burn At Least 90% Gas.

In proposed §63.11237, EPA defines a gas-fired boiler as “any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.” ACC supports the allowance for liquid firing during periods of curtailment for these boilers, as facilities need the flexibility to continue to operate during periods when natural gas supply is interrupted. However, we believe that the gas-fired boiler definition should be expanded to allow for additional operational flexibility. EPA has been consistent throughout the boiler rule proposals to use 10% fuel use as a way to subcategorize and as a threshold for movement from one subcategory to another. For example the coal subcategory includes units that burn at least *10%* coal with other fuels. Therefore, it logically follows that included in the gas subcategory should be any unit that burns at least 90% gas and *10%* or less of any other fuel. This change would give some flexibility and relief to facilities that burn oil in these types of boilers for more than 48 hours per year, but less than 10% of the time. We recommend that EPA revise the definition of gas-fired boiler and oil fired boiler subcategory to indicate that a boiler can still be classified as a gas-fired boiler if it burns gaseous fuels with up to 10% of any other fuel.

B. The Definition Of Natural Gas Should Be Revised To Be Consistent With The NSPS Definition.

The definition of natural gas proposed in §63.11237 includes only the prior NSPS definition, not the 2009 NSPS Subparts Db and Dc revisions. The natural gas definition for these rules should be consistent and this rule should, therefore, also include the following: “(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).”

XVIII. Reporting

A. The Requirement For ERT Reporting Should Be Removed.

We believe that the requirement for ERT reporting should be removed. In the recent past, industry had many problems submitting Industrial Boiler MACT and CISWI ICR data using the ERT, and many problems with the tool continue to exist based on experience that utilities and testing firms are having trying to enter Utility Boiler MACT ICR data into the tool. Use of this tool will add cost and burden to the emissions testing requirements in this rule. Moreover, the tool does not replace a stack test report, but rather is an additional reporting burden, as permitting agencies will still require a hard copy stack test report with all supporting documentation.

B. The ERT Is Not Workable.

Below are a number of issues we and others have encountered with the ERT:

- It is not intuitive and is difficult to use.
- It is not set up to handle data from multiple stacks from the same source being tested at the same time.
- It only allows for one intermittent leak check during a test run. Many stacks have more than two ports so the ERT should be set up to handle those scenarios rather than having to add leak check volumes together to come up with a total.
- It is not set up to handle mixed blend calibration gases, which are extremely common.
- The import tool is inadequate, as it does not have enough rows for long runs and often imports data in the wrong order.
- The tool is not set up to handle blank corrections.
- The tool is idiosyncratic slow to respond.
- The tool seems to be designed only to work under the most ideal of test scenarios. The Agency should ask for comments on the format and uploading tool from individuals that encounter real world scenarios for testing to incorporate into future editions.
- Revisions and updates to the ERT should be apparent so that users can make sure the version they are using is the most recent version available.

Requiring use of the ERT will add time and cost to stack testing projects, as time will have to be spent entering the test data into the tool and then quality assuring the ERT output. We do not believe that this extra cost is included in EPA's analysis.

In addition, compliance tests are submitted to the state or local permitting agency for review and approval. At times, the agency provides comments to the regulated facility that adjusts the test results. In these cases, the information entered into the ERT at the time of the stack test would not match the final, state-approved emission test results. At a minimum, there needs to be a mechanism for the ERT data to be updated in these situations or a flag to indicate whether the report has been reviewed and approved by the permitting agency. Alternatively, EPA could require the permitting agency to enter the stack test results into the ERT once approved, rather than requiring facilities to enter the data.

If use of the ERT is required in the final rule, EPA needs to develop a comprehensive ERT Guidance Manual that provides complete instructions with examples for:

- All entries, including:

- the various facility identification codes, and where to find them,
 - BDL instructions,
 - calibration instructions,
 - required attachments;
- the “external” spreadsheets” that are used to import certain data into the ERT; and,
 - the “external spreadsheets” that are used for reporting test methods not currently supported by the ERT.

Lastly, EPA should develop an “outreach” or “training” program that provides instructions for specific source categories and related parameters. Such efforts need to be readily-available, i.e., through presentations at relevant conferences/seminars, as well as web-based sessions (“webinars”).

XIX. Title V

A. All Affected Area Sources Should Be Exempted From Title V Requirements.

Like all other area sources, EPA should exempt synthetic area sources from the Title V requirements. EPA has proposed to exempt all “natural” area sources, but has singled out synthetic minor area sources for disparate treatment. 75 Fed. Reg. 31910. As discussed below, there are no relevant distinctions to be drawn between synthetic and natural area sources, making EPA’s decision to subject synthetic area sources to CAA Title V requirements arbitrary.

EPA correctly concluded the Agency is justified in exempting most affected sources in the industrial boiler and the institutional/commercial boiler area source categories from Title V permitting requirements. In the preamble, EPA details the numerous reasons why compliance with Title V requirements is “impracticable, infeasible, or unnecessarily burdensome” on an area source category. CAA §502(a). *Id.* at 31910 – 13.

ACC fully supports EPA’s analysis under its four - factor test for assessing whether Title V permitting would be unnecessarily burdensome for an area source category. *Id.* EPA concludes for each factor that:

1. **Factor one:** “[T]he monitoring, recordkeeping and reporting requirements of the proposed NESHAP are sufficient to assure compliance with the provisions of the NESHAP. Given the nature of the operations at most area sources and the types of requirements in this rule, title V would not significantly improve those compliance requirements.” *Id.* at 31911

2. **Factor two:** “[P]ermitting would impose significant costs on these area sources, and, accordingly, we conclude that title V is a significant burden for the sources in these categories that we propose to exempt” and that “it would likely be difficult for them to obtain sufficient assistance from the permitting authority.” *Id.* at 31912
3. **Factor three:** “Because the costs, both economic and non-economic, of compliance with title V are high, and the potential for gains in compliance is low, title V permitting is not justified for the sources we propose to exempt.” *Id.*
4. **Factor four:** “[T]he statutory requirements for implementation and enforcement of this NESHAP by the delegated States and EPA and the additional assistance programs ... [that are available] are sufficient to assure compliance with these proposed standards without relying on title V permitting.” *Id.*

Additionally, the proposal concludes that exemption from Title V for synthetic minor sources would not adversely affect public health, welfare or the environment. Thus, EPA concludes that excluding most area source from Title V requirements is appropriate. ACC agrees with that conclusion.

However, ACC strongly disagrees with EPA’s conclusion that the analysis of the four factor test should come out any differently for those synthetic area sources that voluntarily reduced their emission levels to below major source thresholds through the installation of air pollution controls. These sources are considered and operate as area sources and as such they too should be exempt from Title V. *Id.* at 31913.

First, EPA fails to support its factual assertions with any concrete information. EPA points to no sources in the record to factually justify the proposed disparate treatment. In fact, it appears that EPA has copied key factual assertions about the boiler synthetic area sources subject to this rule from its factual claims about a wholly different set of synthetic area sources, i.e., chemical manufacturing, subject to another rule. Compare 75 Fed. Reg. 31912 with 74 Fed. Reg. 56014 (both asserting that “many of these sources are located in cities, and often in close proximity to residential and commercial centers where large numbers of people live and work. The record also indicates that many of these synthetic area sources have significantly higher emissions potential when uncontrolled than the other sources.”) ACC therefore challenges the factual basis for EPA’s conclusions.

Second, even assuming that EPA’s factual assertions are correct, a proper analysis of the four factors justifies exempting all area sources subject to this rule from Title V requirements, as there is no basis to differentiate between natural and synthetic area sources. There is no basis to believe that Title V would significantly improve the compliance requirements at synthetic area sources, as compared to natural area sources. The burden that the Title V requirements would place on a facility is exactly the same, regardless of whether the area source is synthetic or natural. EPA has no reason to believe that the implementation and enforcement programs in place are less likely to be sufficient for synthetic area sources than they are for natural area sources. Finally, while offering it as a distinguishing factor, EPA provides data to support its

belief that synthetic sources are any more likely to be located in urban areas than are natural sources.

Finally, the only substantive differentiation that EPA suggests between the area sources is that “synthetic area sources have significantly higher emissions *potential* when uncontrolled than the other sources in the boiler area source categories.” (Emphasis added.) This difference, even if factually correct, does not warrant different treatment under the rule, as it has already been addressed by separate Clean Air Act provisions. Namely, in order for a facility to be treated as a synthetic minor due to the installation of control equipment, the obligation to use that equipment must be federally - enforceable, a fact that the proposed rule utterly fails to acknowledge. *See* 40 C.F.R. § 63.2 (definition of “potential to emit”). Such sources therefore have a legal duty to comply with their emissions limitations, which are enforceable by EPA and citizens. *Id.* (definition of “federally enforceable”). In order to have been approved by EPA, a state operating permit program that imposes a federally enforceable requirement to use control equipment must provide the public with notice and an opportunity to comment on draft permits, *Id.* (definition of “federally enforceable,” ¶ (6)(v)), and must also provide for emissions reporting and public availability of reported information, *id.* (definition of “federally enforceable,” ¶ (6)(i)); *see also* 40 C.F.R. §§ 51.211, 51.230(f). The final rule’s rationale is also contrary to the teaching of *Alabama Power Co. v. EPA*, which held that, for determining a source’s potential to emit, EPA must take into account not only its design capacity, but also the “anticipated functioning of the air pollution control equipment.” 636 F.2d 323, 353 (D.C. Cir. 1979). Thus, for regulatory purposes, it should not matter whether a source is a “natural” area source or whether it attained that status through operational limits or the installation of add - on controls.