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COMMENTS OF THE COUNCIL OF INDUSTRIAL BOILER OWNERS
on
EPA Proposed Reconsidered Rule
Commercial and Industrial Solid Waste Incineration Units:
Reconsideration and Proposed Amendments

EPA–HQ–OAR–2003–0119
76 Fed. Reg. 80452

February 21, 2012

Filed by:

Robert D. Bessette
President

Council Of Industrial Boiler Owners
6801 Kennedy Road, Suite 102, Warrenton, VA 20187
Phone: 540.349.9043 Fax: 540.349.9850
E-Mail: cibo@cibo.org

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INTRODUCTION

CIBO is a broad-based association of industrial boiler owners, architect-engineers, related equipment manufacturers, and university affiliates with members representing 20 major industrial sectors. CIBO members have facilities in every region of the country and a representative distribution of almost every type of boiler and fuel combination currently in operation. CIBO was formed in 1978 to promote the exchange of information within the industry and between industry and government relating to energy and environmental equipment, technology, operations, policies, law and regulations affecting industrial boilers. Since its formation, CIBO has been active in the development of technically sound, reasonable, cost effective energy and environmental regulations for industrial boilers. CIBO supports regulatory programs that provide industry with enough flexibility to modernize – effectively and without penalty – the nation's aging energy infrastructure, as modernization is the key to cost-effective environmental protection.

EPA issued the CISWI rule in conjunction with three other interrelated rules, and has maintained the rules on the same notice and comment calendar.[1] For ease of discussion, the four interrelated rules will be referred to as the "Boiler MACT rules."

EPA has solicited comments several times on CISWI standards under the Clean Air Act (CAA) § 129. CIBO has submitted comments on legal and practical issues raised by this rule and hereby incorporates by reference its prior comments on the June 2010 Proposed Rule[2] and Petition for Reconsideration of the March 2011 Final CISWI rule.[3]

PART ONE – TIMING FOR COMPLIANCE AND COMMENTS

I. STAY OF THE MARCH 2011 RULE AND NO ACTION ASSURANCE

EPA should stay the effect of the March 2011 CISWI rule and issue additional guidance or no enforcement assurance to address compliance exposure faced by sources during the period before EPA issues a Final Reconsideration Rule.

EPA had delayed the effective dates of the March 2011 Final Boiler MACT and CISWI rules.[4] However, on January 9, 2012, the U.S. District Court for the District of Columbia vacated EPA's Delay Notices,[5] and any compliance obligations for sources covered by the Boiler MACT and

[1] National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 76 Fed. Reg. 80,598 (Dec. 23, 2011) (to be codified at 40 C.F.R. pt. 63) (Boiler Rule); National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers, 76 Fed. Reg. 80,532 (Dec. 23, 2011) (to be codified at 40 C.F.R. pt. 63) (Area Source Rule); Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Proposed Amendments; Non-Hazardous Secondary Materials That Are Solid Waste, 76 Fed. Reg. 80,452 (Dec. 23, 2011) (to be codified at 40 C.F.R. pt. 241) (CISWI and NHSM Rule).

[2] *See* CIBO Comments on CISWI Proposed Rule, EPA-HQ-OAR-2003-0119-1834.

[3] See CIBO Petition for Reconsideration on CISWI Final Rule, EPA-HQ-OAR-2003-0119-2540.

[4] Industrial, Commercial, and Institutional Boilers and Process Heaters and Commercial and Industrial Waste Incineration Units; Delay Notice, 76 Fed. Reg. 28662 (May, 21, 2011).

[5] Opinion, Sierra Club v. EPA, No. 11-1278 (DDC Jan. 9, 2012).

CISWI rules became effective immediately. EPA recognized that the vacatur triggered some compliance obligations, and on January 18, 2012 EPA announced in a letter to Senator Wyden[6] its plan to address the implications of the vacatur. Then on February 7, 2012, EPA issued a No Action Assurance memorandum that addresses some – but not all – of the implications of the vacatur.[7] EPA's memorandum assures sources in a limited scope of circumstances that their failure to have met a deadline to file an initial notification would not be the basis of an enforcement action brought by EPA, given that the deadline fell during the period when the Boiler MACT and CISWI rules were not in effect. In the letter to Senator Wyden, EPA asserts that for any "permitting or compliance challenges" arising from the vacatur, EPA will issue a stay for 90 days or longer, and in the event of lawsuits arising from the vacatur, EPA is "confident" that it has the legal tools to address those matters. Notwithstanding its assurances, EPA's memorandum does not alleviate many pressing continuing compliance concerns faced by sources because the rules remain in effect.

This ongoing uncertainty is created by the timing of the four interrelated rulemaking proceedings and the fact that the rules are now in effect and will be in effect until EPA completes the rulemaking proceedings and issues Final Reconsidered Rules in Spring 2012. One issue, for example, that EPA did not address in its memorandum is the circumstance faced by sources that combust alternative materials in their boilers. With March 2011 definitions of "fuel" and NHSM now in effect, and boiler and incinerator standards in effect, a source that currently combusts a material that has been defined as waste would presumably be subject to CISWI standards. However, that same material may be redefined as fuel under the Final Reconsidered NHSM Rule, and the unit would be classified as a boiler.

The effectiveness of the rules, and the imposition thereby of regulatory obligations, have created compliance exposure for sources that EPA could and should eliminate. CIBO and other organizations in meetings and discussions with EPA have explained the ongoing compliance exposure during this interim period between the rules going into effect and issuance of final rules that will replace the March 2011 rules. EPA should alleviate these concerns by staying the effect of the rules during this interim period and issuing further guidance or no enforcement assurance that addresses these concerns.

II. COMPLIANCE DATES SHOULD BE RESET

EPA indicates that it intends to reset the dates for compliance for the Final Reconsidered Rule, which will be based on the date of publication of the final rule. EPA proposes to set the compliance date for existing incinerators, ERUs, and waste-burning kilns at the earlier of 5 years after publication of the final reconsideration rule or 3 years after the state plan is approved. For new sources in those subcategories, EPA proposes a 6 month compliance date after publication. For the small remote incinerator subcategory, the rule did not change substantially, and EPA seeks comment on whether and why the compliance date for those units should likewise be reset. 76 Fed. Reg. 80465.

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[6] *See* EPA Letter to Sen. Wyden, Jan. 18, 2012. Appendix A.

[7] *See* EPA No Action Assurance letter, Feb 7, 2012. Appendix B.

Sources need a substantial period to come into compliance and CIBO strongly supports resetting the dates. Internal planning for compliance with major rules requires involvement of personnel at all levels of the company, and in the case of this major rule, will require major capital projects at many facilities covered by this rule. CIBO has commented in earlier comments at length on the need for sufficient time for the complex undertaking of retrofitting a major boiler facility, including compliance planning, engineering design, capital approval, equipment purchase, installation and testing, all in advance of the compliance date.

Here, because EPA issued an immediate Notice of Reconsideration of the rule,[8] sources understood as of the publication of the March 2011 Final Rule that there would be amendments to the rule that could very well alter compliance strategies. At the time, it was unclear whether the rule would change considerably from the final version, and with respect to which sources and emission limits. One significant element of the CISWI rule that would clearly undergo change, based in part on EPA's flawed data, was the inventory of units in the CISWI category. In addition, several clear problems in the March 2011 Final NHSM rule made it clear that the definitions of NHSM and fuel were highly likely to be amended. Changes to correct data and likely revisions to the fuel definition would clearly affect the populations of units in CISWI subcategories and therefore floor calculations and emission limits. Under those circumstances, it would not have been rational for sources to develop compliance strategies and begin the complicated, costly process of compliance with a rule that EPA had announced would be changed.

As anticipated, EPA has addressed several significant elements of the March 2011Final NHSM rule, which have the effect of reclassifying sources between the incinerator and boiler categories and among subcategories in each rule. Even during the development of and comment period on the Proposed Reconsidered NHSM rule, EPA issued three interpretive letters that directly affected subcategory populations. 76 Fed. Reg. 80473. Among the sources whose classifications were directly affected are CIBO members. And EPA went on to propose other significant changes in the fuel definition that must be accounted for by sources in their compliance plans.

Even the Final Reconsidered NHSM rule published, however, will not fully determine the status as waste or NHSM of many materials currently being used as fuel, and that rule provides a petition process to make those determinations. Sources that are unsure about the status of their materials will petition EPA for determinations of the status of their materials, and on the basis of those determinations, the sources will then know whether their continued use of those materials will classify the source as an incinerator or boiler. CIBO has urged EPA to establish a timeline for completion of the initial round of waste/fuel determinations, although the Proposed Reconsidered NHSM Rule does not indicate a date-certain by which sources will have final decisions regarding the status of their materials.

In addition to uncertainties faced by sources themselves, their source compliance plans directly affect States. As EPA points out, incinerator NSPS standards under CISWI must be built into State programs. Unless EWA resets the compliance dates, the "compliance dates from the final

[8] National Emission Standards for Hazardous Air Pollutants; Notice of Reconsideration, 76 Fed. Reg. 15266 (March 21, 2011).

rule would essentially provide less than 2 years for states to implement a revised state plan and for increments of progress to be scheduled." Until sources define their compliance plans, "states will be uncertain on an appropriate schedule for increments of progress, which includes submittal of a final control plan." 76 Fed. Reg. 80465.

III. THE PERIOD PROVIDED FOR COMMENT ON THE RULES WAS ARBITRARILY SHORT

Under basic principles of due process and administrative law, EPA has an obligation to provide the public with a reasonable opportunity to comment on proposed rules. Specifically, Congress requires EPA to give the public "a reasonable period . . . of at least 30 days" in which to comment on "any regulation" promulgated under the CAA.[9] By the clear terms of the CAA, Congress indicates that 30 days is the minimum time necessary to give the public a reasonable opportunity to evaluate a proposed rule and provide adequate feedback to the Agency. Thus, a comment period meeting the statutory 30-day minimum would be reasonable for a single, ordinary proposed rule. Here, EPA has violated the clear terms of the CAA and deprived sources of a means to adequately protect their interests and rights in the administrative and judicial processes by providing 60 days of comment for four complex interrelated rules.

Under reconsideration, the rules are no less complex then when they were first proposed in June 2010. A 60-day comment period is particularly inadequate given their complexity, breadth of applicability, and economic impact. EPA has added data on reconsideration for 300 additional sources that must be reviewed and sources face the pressures of sorting complex data and developing thorough comments that address very technical issues. Although EPA released the signed rule proposals almost one month prior to their publication in the Federal Register, it did not provide the majority of the supporting documentation for the proposed rules until publication on December 23, 2011, just two days before the holidays, effectively shortening the comment period.

The four proposed rules under reconsideration make for an enormously broad and costly proposal, which would have a significant economic impact across numerous and diverse sectors of the US economy, with the boiler MACT rule alone imposing capital costs of more than $5 billion and affecting nearly 200,000 sources, according to EPA. 76 Fed. Reg. 80622. This economic impact alone, which CIBO estimates to be over $14 billion,[10] requires a comment period sufficient to ensure thorough consideration of the proposed rules. CIBO joined with 26 other entities and trade associations, representing tens of thousands of affected sources, to ask EPA to extend the comment period by 30 days and explaining in detail why the extra 30 days was needed and justified.[11] On February 14, 2011, just seven days before the comments were due, EPA denied the request.

Sources have done the best under the circumstances to develop thoughtful comments on their concerns and the specific requests for comment EPA made in the four rules, and where necessary or appropriate, and where time permitted, to compile data to support its positions.

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[9] 42 U.S.C. § 7607(h) (2006).
[10] How Costs Were Determined for CIBO Boiler MACT Study, January 2012, Appendix C.
[11] *See* January 18, 2011 letter of 27 organizations to EPA, Appendix D.

PART TWO – SPECIFIC ISSUES

I. "CONTAINED GASEOUS MATERIAL"

In the Final March 2011 CISWI rule, EPA removed from the regulation a longstanding clarifying definition of "Contained gaseous material." This had the effect of redefining non-containerized gases (those in pipes, pipelines, vents, or ducts) as solid waste. The result was that units using those gases could thereby be subject to CISWI standards.

In the Proposed Reconsidered rule, EPA reversed that course, stating that it "did not intend to create ambiguity by removing the definition of ''contained gaseous material'' from the CISWI rule. Accordingly, the proposed CISWI reconsideration rule includes the same definition of ''contained gaseous material'' that was removed from the final CISWI rule." 76 Fed. Reg. 80463.

This resolution is consistent with longstanding EPA regulatory treatment of contained gaseous materials and for the reasons stated in its Petition for Rulemaking, CIBO supports this outcome.

II. STARTUP, SHUTDOWN, AND MALFUNCTION

A. Work Practices for CISWI Units

EPA has not revised its approach to startup and shutdown periods in the CISWI proposed reconsidered rule. The CISWI provisions for startup/shutdown (Subpart CCCC and DDDD) should be revised to be similar to the provisions in the Boiler MACT rule (Subpart DDDDD) and Area Source (Subpart JJJJJJ). If a source is burning nonwaste, it shd use bmact gact standards, and ss provisions would apply.

The startup/shutdown provisions in CISWI in §§ 60.2145(a)(1) and 60.2710(a)(1) continue to state "[t]he emission standards and operating requirements set forth in this subpart apply at all times." 76 Fed. Reg. 80492, 80512. EPA provided a summary, insufficient response to this issue in its Response to Comments, simply referencing the preamble of the rule:

> We concluded that CISWI units would be able to meet the emissions limitations during periods of startup because most units used natural gas or clean distillate oil to start their incinerators and only add waste after the incinerator has reached combustion temperatures. *Id.* We proposed that emissions from burning natural gas or distillate fuel oil would generally be significantly lower than from burning solid waste. *Id*. We further proposed that emissions during shutdown would also be generally significantly lower because the waste would be almost fully combusted before the unit began shutting down. *Id.* We proposed that these factors, in conjunction with the variability built into the MACT standards and the longer averaging periods, meant that sources would be able to comply with the standards during periods of startup and shutdown. *Id.* For violations caused by malfunction events, EPA stated at proposal that we would consider relevant factors in determining the appropriate action to take. We have eliminated the SSM

exemption in this rule. Consistent with *Sierra Club v. EPA*, EPA has established standards in this rule that apply at all times. 76 Fed. Reg. 15,737.

As CIBO mentioned in its Petition, although CISWI units do typically utilize conventional fossil fuels for startup/shutdown periods, and that during those periods they do not fire waste, CISWI units are combustion devices that have similar operational characteristics and limitations as boilers and process heaters subject to Subparts DDDDD and JJJJJJ, even during startup and shutdown periods.

This argument is further developed in CIBO's Petition for Reconsideration

B. O2 adjustment during startup/shutdown

EPA seeks comment on CO CEMS and whether the finalized rule should waive the percent oxygen correction factor during startup and shutdown. 76 Fed. Reg. 80,461. The 7 percent oxygen correction waiver during startup and shutdowns would apply to any CISWI sources that elect to demonstrate compliance with CO limits using a CO CEMS instead of performing stack tests. 76 Fed. Reg. 80,461. EPA should remove the oxygen correction for startup and shutdown periods.

When emission concentrations are corrected it can be significantly higher during startup and shutdown periods. This is due to the fact that conditions are not optimal for emissions control performance during transitional periods. Pollution controls go through transient temperature and flow conditions, which make SNCR systems less effective during startup than during full load steady state conditions. This presents a distinct condition different from normal operations. Considering this, EPA should provide for uncorrected concentrations standards that reflect actual performance or corrected concentration standards, that account for concentration "blow up" when dilute conditions are corrected to 7 percent oxygen.

C. EPA should use work practice standards for malfunction

EPA has determined that malfunctions should not have work practice standards and has instead provided for an affirmative defense. 76 Fed. Reg. 80,461. For the same reasons identified by CIBO in prior versions of this rulemaking, CIBO opposes this approach as not reasonable.

Given that malfunctions are essentially the same as periods of startup and shutdown, work practice standards should also apply. As CIBO points out in its Petition, EPA recognizes in both the Boiler MACT and Area Source rule, "that it is not feasible to require stack testing – in particular, to complete the multiple required test runs – during periods of startup and shutdown due to physical limitations and the short duration of startup and shutdown periods. Operating in startup and shutdown mode for sufficient time to conduct the required test runs could result in higher emissions than would otherwise occur." 76 Fed. Reg. 15577, 15642. It is irrational to view malfunctions any differently than startup/shutdown periods. As such, EPA should establish work practice standards for malfunctions. The rule is unreasonable as it is and subjects sources to the risk of noncompliance especially given the fact that malfunctions are unavoidable and unpredictable.

By treating a malfunctions as something other than an operating condition, EPA has inappropriately placed the burden on the source to prove that excess emissions were caused by a malfunction. Malfunctions clearly meet the Clean Air Act definition for work practice standards. CAA section 112(h). EPA should establish a work practice standard that requires pre-determined malfunction plans with practices and procedures for potential malfunctions; require reporting of any malfunctions; address any malfunctions not contemplated and add to the plan and address as appropriate.

Alternatively, if EPA rejects such work practice standards and, instead, includes an affirmative defense for malfunctions, the terms of the defense need to be changed. First, a source should not have to prove it meets every criterion to successfully claim the affirmative defense. Rather, the different criteria should be factored in evaluating whether the excess emissions should be excused.

The proposed criteria in the Reconsideration Rule for establishing an affirmative defense are poorly defined and do not reflect on whether a malfunction actually occurred. For example, the requirement that sources rely on overtime workers to address the malfunction, 76 Fed. Reg. 80,491, objectively proves nothing. The personnel onsite at the time of the malfunction event may not be the personnel with the expertise to resolve the malfunction, yet if they do not remain onsite as overtime personnel, under EPA's structure, that source fails to meet one of the indicia of a malfunction. Moreover, the affirmative defense criteria in some cases impose draconian obligations on malfunctioning sources without any regard for their cost-effectiveness. For example, the source must show "[r]epairs were made as expeditiously as possible . . . excess emissions (including any bypass) were minimized to the maximum extent practicable . . . [a]ll possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health." 76 Fed. Reg. 80,461 (emphasis added). This could lead to the EPA or a court imposing extreme MACT regulations on sources during malfunctions. Overall, the provisions impose vague obligations on malfunctioning sources which will lead to inconsistent interpretations in different jurisdictions, and lack precision that is fundamental to an adequate defense in an enforcement proceeding.

III. CHANGING STATUS AS BOILER OR INCINERATOR

EPA seeks comment on the provisions included in the final CISWI rule regarding changing fuels being combusted and thereby changing the status of a unit as an incinerator or boiler, particularly on whether the provisions should include further clarification on the timeline and regulatory requirements of a fuel switch. Additionally, EPA is soliciting comment on an alternative time period for switching frequency. The Proposed Reconsideration Rule maintains the Final Rule's stipulation that CISWI standards will remain in effect for at least 6 months after a source stops combusting solid waste. 76 Fed. Reg. 80,459-60.

CIBO opposes EPA's prescriptive approach to boiler or incinerator status, for the reasons discussed in relation to treatment of CISWI units during SSM periods. These units do routinely switch fuels following startup and prior to shutdown, and there should be no barrier to the units complying with the standard that governs other units burning similar fuels. EPA's constrained approach is not necessary to ensure compliance with the applicable standards. Instead, the

constraints result in EPA governing economic decisions related to supply and demand, and deny regulated sources the flexibility to make sound economic decisions related to their operations.

The practical effects of the regulation are far-reaching. For example, if a facility burns a waste /fuel mix, which is typical, and is operating under the CISWI regulations, if for some reason the waste component of their fuel supply becomes unavailable, solid fuel boilers (e.g., coal) would not be able to meet the emission requirements under CISWI (e.g. sulfur dioxide) and would have to shut down operations (or find an alternate source of energy) until they are permitted to switch back to an appropriate standard for their solid fuel. Many waste streams are not available year round and their supply is dependent upon production schedules at other entities. Also, a facility may inadvertently burn a material that is a waste or later becomes classified as a waste, and might be forced to shut down or operate under the CISWI regulations for six months during periods while no waste is being burned. This presents an additional and significant risk to attempting to burn alternative fuels. Another complication is that many units do not fire solid waste until the unit is started up and at steady state.

To remedy these damaging effects, a provision should be added that allows a facility to elect to either (1) comply with CISWI at all times or (2) comply with CISWI while burning solid waste but comply with otherwise applicable standards under section 112 of the Clean Air Act while not burning solid waste. This approach would be consistent with the approach recommended for SSM periods. The Hazardous Waste Combustor MACT (see 40 CFR 63.1206(b)(1)(ii) and 63.1209(q)) provides a helpful referent.

This will also alleviate another problem caused by the EPA's decision that work practice standards are not adequate for the regulation of sources during their startup and shutdown periods. Because EPA has stated it cannot use work practice standards during periods of startup and shutdown, compliance with CO emission limits along with other parameters such as sorbent loading in spray dryer absorbers will be very problematic. EPA should resolve this problem by allowing sources that encounter these issues to elect to comply with section 112 standards during all times that solid waste are not being combusted or, alternatively, during just the startup and shutdown periods.

If a source elects one of these options, it would have to conduct all necessary performance testing and establish continuous compliance monitoring systems and recordkeeping systems to comply with both the section 129 (CISWI) and the section 112 rules. Facilities can easily document which mode of operation they are in (by tracking solid waste feed rates) and readily show compliance with the applicable standard. There are no compliance assurance issues with allowing this flexibility, as sources are able to demonstrate during what periods solid waste is in the combustor.

IV. O2 Monitoring

In the proposed Reconsidered Rule, EPA removed the requirement that sources demonstrate continuous CO monitoring with CO CEMS. 76 Fed. Reg. 80,456. EPA is instead allowing sources the option to use CO CEMS to demonstrate compliance. 76 Fed. Reg. 80,462. EPA seeks comment on whether allowing the option to use CO CEMS instead of oxygen monitoring is of potential use to affected sources and implementing agencies, and also whether the oxygen

monitoring requirements coupled with an annual CO stack provides an appropriate parameter to ensure optimized combustion short of direct CO measurements. 76 Fed. Reg. 80,462.

As set forth in comments CIBO's Petition for Reconsideration of the Final Boiler MACT Rule, EPA's decision to allow oxygen monitoring is appropriate and EPA is justified in providing flexibility. Furthermore, EPA's decision to revise the continuous oxygen monitoring provisions to allow existing sources to use their current oxygen analyzer and oxygen trim systems to demonstrate continuous compliance is appropriate. As EPA reasoned in the Reconsidered Boiler MACT Rule, "the data from such devices is not only an appropriate control for efficient combustion and a less burdensome alternative to monitoring stack oxygen concentration but also is a better system for many types of units that experience significant load swings and operate with high levels of excess air." 76 Fed. Reg. 80,609.

It is also appropriate for EPA to remove the requirement that the oxygen monitor be located at the outlet of the boiler. As it has in the Reconsidered Boiler MACT Rule, EPA should allow the oxygen monitor to be located either within the combustion zone or at the outlet as a flue gas oxygen monitor. This type of flexibility will reduce the cost and burden of the continuous oxygen monitoring requirements by allowing facilities to utilize existing oxygen trim systems rather than installing CEMS.

Many existing boilers already utilize flue gas oxygen analyzers for indication, alarm, and oxygen trim control, where the fuel/air ratio is automatically controlled for optimum combustion conditions. The sensing location for existing oxygen monitors is typically in the optimum location to sense flue gas composition as reliably as possible, because sensing of oxygen in these cases maintains proper excess air levels and helps prevent unsafe operating conditions. For many types of combustion units, that location is near the boiler furnace outlet in a position upstream of any potential air inleakage points to avoid erroneous excess air indications which would drive controls in an erroneous direction. This location is also upstream of air preheaters where utilized, thus avoiding the erroneous (high oxygen) indications due to inherent leakage across regenerative air preheater seals or potential tube leakage in recuperative air preheaters. For those units equipped with existing oxygen sensors and oxygen trim control systems, flue gas composition at those locations would already be used for combustion tuning and control characterization. Therefore, if oxygen monitoring is desired for continuous compliance, sensing oxygen at that current location would be logical and proper from a technical perspective.

The Oxygen analyzer system is defined in §60.2265 in part as follows:

> Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler flue gas or firebox. This definition includes oxygen trim systems. The source owner or operator is responsible to install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations. 76 Fed. Reg. 80,502.

The optimum location of the sensor or sampling point is dependent on the specific boiler design. In different applications, that location might be at the furnace exit, in the convection pass, at the boiler outlet, or at another downstream location. We recommend that this language be modified as follows to allow latitude in the exact location of the sensing point:

> Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler/process heater ~~or~~ firebox, *or other appropriate intermediate location*. This definition includes oxygen trim systems. The source owner or operator is responsible to install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.

In paragraph 60.2145(w)(2) and again in paragraph 60.2165(q)(2), EPA specifies the level that the oxygen trim system should be set at. For many of the same reasons contained CIBO's Comments on the 2011 Reconsidered Boiler MACT Rule, filed on February 21, 2012, EPA should revise the wording of these sections to include the italicized language below:

> You must operate the oxygen analyzer *and trim* system with the oxygen level set at *or above* the minimum percent oxygen by volume that is established as the operating limit for oxygen . . . *when firing the fuel or fuel mixture utilized during the most recent CO performance stack test. Operation of oxygen trim control systems to meet these requirements shall not be done in a manner which compromises furnace safety.*

V. "HOMOGENEOUS WASTE" DEFINITION AND DETERMINATIONS

Under section 129(g)(1) of the Clean Air Act, qualifying small power production facilities, as defined in 16 U.S.C. 769(17)(C) and qualifying cogeneration facilities, as defined in 16 U.S.C. 796(18)(B), which burn homogeneous waste (such as tires but not refuse-derived fuel) for the production of electric energy or in the case of qualifying cogeneration facilities, which burn homogeneous waste for the production of electric energy and steam or forms of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes, are not subject to CISWI. Given the importance of the term "homogenous waste" in these exclusions, the regulated community had asked EPA to define that term in the CISWI rule and EPA did so in the final rule published on March 21, 2011. However, because this definition was not included in the proposed CISWI rule, EPA is now seeking comment on it in the CISWI Reconsideration rule.

CIBO Members have concerns over EPA's definition of homogenous waste, as well as EPA's discussion of this definition in the preamble to the CISWI reconsideration rule. In fact, we believe that not even traditional fuel could meet this definition, thereby undermining Congress' intent to provide a CISWI exemption for qualifying small power production facilities and qualifying cogeneration facilities. Any final definition of homogenous waste must take into account variability in fuel streams, and in their combustion characteristics and emissions profiles.

EPA has defined "homogeneous waste" as wastes that are "stable, consistent in formulation, have known fuel properties, have a defined origin, have predictable chemical and physical attributes, and result in consistent combustion characteristics and have a consistent emissions profile." 40 C.F.R. 60.2265. The preamble to the rule adds even more conditions which seem inappropriate or troublesome.

"Consistent in formulation" and "predictable chemical and physical attributes" are interpreted as "physical and chemical characteristics are consistent throughout." "Consistent combustion characteristics" and "consistent emissions profile" are interpreted to mean "similar or identical to any other sample." The preamble language adds additional conditions on mixtures of homogeneous wastes. Not only must they be homogenous, they must be from a known origin, mixed in a constant proportion, and conditioned or gasified. See 76 Fed. Reg. at 80462. We find these additional constraints discussed in the preamble to be operationally troubling and contrary to the intent of the "homogenous" definition integral to exemptions for qualifying small power production facilities enacted by Congress in the Clean Air Act Amendments of 1990.

While the 1990 Amendments broadened provisions to include additional categories of waste incinerators it also added exemptions from incinerator classification for units which could be properly regulated under other provisions and make a significant contribution to the Country's energy and natural resource needs. While the legislative history of section 129 does not provide a definition of "homogenous waste," it is clear from the language of the statute that Congress distinguished between heterogeneous material, such as municipal solid waste or "refuse-derived fuel" and homogeneous materials, such as tires, used oil and rail road ties. This distinction is consistent with the clear Congressional intent to regulate municipal solid waste incinerators, while recognizing that the combustion of all materials need not be regulated under this section. See id. at 7051-52 (Sen. Durenberger) (describing a solid waste disposal crisis and concern over "the large number of air toxics emitted by municipal waste combustion units") and 7055 (Sen. Baucus) (discussing the need to separate materials from a mixed waste stream to reduce air emissions).

Based on this legislative history and the plain language of the statute, we believe that the decision whether a material is "homogenous" should be based on the material itself. Thus, the exemption from section 129 for qualifying facilities applies to qualifying facilities that combust materials within a distinct category, such as the tire or used oil examples given in the statute. This definition should not be based on whether or not such materials are mixed in a constant proportion with each other or other traditional fuels and conditioned or gasified as suggested by the preamble language. Any waste materials which are separated into distinct categories of waste, such as wastewater treatment, process wastes, waste railroad ties and other waste materials should be considered homogenous. While these materials may have some variability in composition or emissions, as demonstrated by the data available in the docket for this rulemaking, so do traditional fuels, and this variability does not preclude these materials from being homogenous.

More specifically, the exemption for qualifying facilities does not require that the facility combust a homogenous fuel stream. It says that if a qualifying facility combusts a waste, that combustion is not subject to section 129 as long as the waste that is combusted is homogeneous. This means that a qualifying facility can combust a mixture of fuels without becoming subject to section 129 as long as each component of the mixture is either a non-waste or is homogenous. Thus, a qualifying facility can combust railroad tires, traditional coal, treated seed and resinated wood at the same time and if each separate fuel is either a non-waste or homogenous, a qualifying facility remains exempt. We believe that any other interpretation of this section of the

Clean Air Act would undermine Congress' intent, as expressed by Senator Baucus, to exempt "co-generators of electricity," including facilities that "turn waste to energy."

CIBO also disagree with any conditions on the term "homogeneous" that would require consistent emissions and composition. Even the constituents in traditional fuel and fuel types are highly variable. See proposed 40 C.F.R. 241.3(d)(iii) (allowing use of ranges) and 76 Fed. Reg. at 80477. See also "Contaminant Concentrations in Traditional Fuels: Tables for Comparison," November 29, 2011 (EPA-HQ-RCRA-2008-0329-1877) (showing a wide range of contaminant values in traditional fuels). EPA should recognize that just as with traditional fuels, some degree of variability will likely exist in homogeneous waste materials and mixtures thereof with traditional fuels. The variability of combustion characteristics and emissions in traditional fuels does not preclude their use and neither should it preclude the use of homogenous waste materials. Instead, we suggest that homogeneity is material specific, in contrast to the heterogeneous nature of municipal solid waste. Coal, for instance, is quite variable and even coal from the same mine is expected to show significant variance. ASTM methods for sampling a lot of coal are aimed at determining a proper number of sample increments in order to determine a representative analysis for the particular lot. Even so, a representative analysis of one shipment of coal would not be expected to identically match an analysis from a subsequent shipment, even if from the same mine.

CIBO objects to the preamble language that places additional conditions on mixtures of homogeneous wastes such as they must be "conditioned or processed." This language creates some confusion and may conflict with the NHSM Rule, which states that sufficiently processed materials which meet the legitimacy criteria, are not wastes at all. If a material is indeed classified as a homogenous "waste", any requirement for its further processing seems inappropriate and should instead be determined by operating criteria of the specific combustion device. Therefore, CIBO requests that our concern over this language be addressed in any subsequent preamble or modifications to the definition of homogenous waste.

EPA should remove the added requirement included in this revision for small power producers and qualifying co-generation facilities to submit a request to EPA to combust homogenous waste under the 129 exemption [40 C.F.R. 60.2020 (e) 3 and f (3)]. This request is not necessary and duplicative of the existing requirement for these facilities to notify EPA that they are operating under the 129 exemption [40 C.F.R. 60.2555 (e) 3 and f (3)]. If indeed EPA will not remove this duplicative requirement, differentiated in its form as a request, rather than a notice, we suggest that the notice provision be dropped and the request provision include a mandatory response form EPA within thirty (30) days of receipt or the request is automatically deemed as approved.

VI. WASTE COAL

EPA per the preamble to its Proposed Reconsidered Non Hazardous Solid Material (NHSM) Rule is considering defining currently mined coal refuse as well as legacy coal refuse that is post-processed to be a non-waste fuel. If this definition is implemented in the NHSM Rule, then EPA can eliminate coal refuse facilities from the CISWI Rule.

On the other hand, if EPA does not implement such a definition in the NHSM rule and requires a case by case determination as to whether legacy coal refuse is sufficiently processed to be

categorized as a fuel, then all facilities using coal refuse are at risk of potentially being subject to the CISWI rule. In this event, it is clear that the CISWI Rule does not adequately address the emissions from facilities firing coal refuse. The EPA data base for CISWI references only one facility burning coal refuse (specifically an Anthracite coal refuse). The quality of coal refuse varies substantially from anthracite to bituminous coal and varies considerably within these categories as well. As such, the testing of one unit is inadequate to determine what the emissions limits should be for units burning coal refuse.

Specifically, for purposes of the Proposed Utility MACT and NSPS, the Agency "assumed that all units that combust coal refuse and otherwise meet the definition of a coal refuse-fired EGU combust newly mined coal refuse or coal refuse from legacy piles that has been processed such that it is not a solid waste. As such, EPA in addressing CSAPR and MATS for EGUs evaluated data from multiple facilities burning coal refuse.

To resolve this lack of data issue, we strongly recommend that EPA simply state that coal refuse from active and legacy sites is a fuel and should not be considered a waste. By making the determination that coal refuse is a fuel, coal refuse burning electric generation units would be covered by CSAPR and MATS. EPA had conducted testing of numerous coal refuse fired facilities in setting limits under these rules. Further, the preamble to these rules anticipated that coal refuse would be a classified a fuel.

The alternative would be to conduct comprehensive study to examine emissions from units burning legacy coal refuse that has not been adequately processed. These units should include both anthracite and bituminous waste coal.

VII. CATEGORIES AND SUBCATEGORIES

A. Solid fuel subcategories – HCl and Hg

EPA is taking comment on the proposed revisions to the subcategorization of ERUs, including whether HCl and Hg should be subcategorized. 76 Fed. Reg. 80458.

Fuel flexibility is an important factor in the operation of many industrial facilities, and fuel cost is usually one of the top three costs of doing business. Many facilities have committed to a single solid fuel, such as coal, but other facilities burn a mixture of fuels. EPA should set limits for HCl and Hg for solid fuel-fired units that ensure the maximum number of sources can achieve the limits and that do not disadvantage users of any one particular fuel.

EPA has the discretion and should include a fuel variability factor in the MACT floor analysis for the solid fuel subcategory HCl and Hg limits so fuel pollutant content variability among the top performers is adequately considered. This approach would make achievability of these standards more viable, while reflecting the real world operational and fuel variability that boilers experience.

B. Solid fuel energy recovery units definition

The definitions of coal and biomass ERU subcategories should be revised. EPA should reconcile the definitions of units designed to burn coal in Boiler MACT and CISWI. In the preambles to both the Boiler MACT and CISWI rules, EPA recognizes and discusses that boilers and energy recovery units may switch back and forth between Boiler MACT and CISWI as a result of waste-to-non-waste fuel or non-waste-fuel-to-waste switches. 76 Fed. Reg. 80501, 80655. Being able to switch between CISWI and Boiler MACT will help provide sources with flexibility in their selection of materials they chose to combust for energy recovery.

In the reconsideration proposals for Boiler MACT and CISWI EPA provides definitions for units designed to burn coal and units designed to burn biomass. However the definitions differ substantially and will create confusion and lead to achievability issues if multi-fuel units are treated as biomass units under one rule and coal units under the other.

In the CISWI reconsideration proposal, EPA defines energy recovery units designed to burn coal and energy recovery units designed to burn biomass at §60.2265 (76 Fed. Reg. 80501) and §60.2875 as follows (76 Fed. Reg. 80521):

> *Energy recovery unit designed to burn biomass (Biomass)* means an energy recovery unit that burns solid waste, biomass, and non-coal solid materials but less than 10 percent coal, on a heat input basis on an annual average, either alone or in combination with liquid waste, liquid fuel or gaseous fuels.
>
> *Energy recovery unit designed to burn coal (Coal)* means an energy recovery unit that burns solid waste and at least 10 percent coal on a heat input basis on an annual average, either alone or in combination with liquid waste, liquid fuel or gaseous fuels.

The CISWI definitions differ from the definitions in Boiler MACT at §63.7575 (76 Fed. Reg. 80650):

> *Unit designed to burn biomass/biobased solid subcategory* includes any boiler or process heater that burns at least 10 percent biomass or bio-based solids on an annual heat input basis in combination with solid fossil fuels, liquid fuels, or gaseous fuels.
>
> *Unit designed to burn coal/solid fossil fuel subcategory* includes any boiler or process heater that burns any coal or other solid fossil fuel alone or at least 10 percent coal or other solid fossil fuel on an annual heat input basis in combination with liquid fuels, gaseous fuels, or less than 10 percent biomass and bio-based solids on an annual heat input basis.

Therefore, a combination unit burning equal amounts of coal and biomass would be regulated as a biomass boiler under the Boiler MACT but would be regulated as a coal ERU under the CISWI rules if it also burned some solid waste. A combination unit burning significant amounts of biomass but more than 10 percent coal will not be able to comply with CISWI CO emission limits set using data for coal units. Conversely, a unit burning TDF would be regulated as a coal unit under Boiler MACT but would be regulated as a biomass unit under the CISWI rules if it

also burned some solid waste. A unit burning TDF will not be able to comply with CISWI 7.3 ppm SO_2 limit set based on biomass units. Units that are categorized as biomass units under Boiler MACT need to be considered biomass units under CISWI, and units that are categorized as coal units under Boiler MACT need to be considered coal units under CISWI.

Therefore, we propose the following revised definitions under the CISWI rule:

> *Energy recovery unit designed to burn biomass (Biomass)* means an energy recovery unit that burns solid waste, biomass, and non-fossil solid materials on a heat input basis on an annual average, either alone or in combination with coal or other solid fossil fuel, liquid waste, liquid fuel, or gaseous fuels.
>
> *Energy recovery unit designed to burn coal (Coal)* means an energy recovery unit that burns solid waste and at least 10 percent coal or other solid fossil fuel on a heat input basis on an annual average, either alone or in combination with liquid waste, liquid fuel or gaseous fuels, or less than 10 percent biomass and bio-based solids on an annual heat input basis.

EPA should also provide definitions in the CISWI rules for "biomass" and "solid fossil fuel" that are the same as those definitions in the Boiler MACT.

VIII. ALLOW EMISSIONS AVERAGING FOR CISWI UNITS

EPA's rationale for denying requests to include emissions averaging is not a correct interpretation of its authorities. EPA has already incorporated emissions averaging into the existing section 129 rules and should do so in this rule.

In the Proposed Reconsidered rule, EPA states, "[t]he applicability of CISWI is such that each unit is an affected facility, if it otherwise meets the applicability of the rule. We cannot allow emissions averaging across affected facilities because we establish MACT on an affected facility basis and it would be impossible to justify MACT when averaged across affected facilities." 76 Fed. Reg. 80463.

First, there is precedent for the Agency to include emissions averaging in a section 129 rule. This is found at 40 CFR 60 Subpart Cb – Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994:

From §60.33b:

> (d) For approval, a State plan shall include emission limits for nitrogen oxides at least as protective as the emission limits listed in table 1 of this subpart for designated facilities. Table 1 provides emission limits for the nitrogen oxides concentration level for each type of designated facility.
>
> > (1) A State plan may allow nitrogen oxides emissions averaging as specified in paragraphs (d)(1)(i) through (d)(1)(v) of this section.

> (i) The owner or operator of a municipal waste combustor plant may elect to implement a nitrogen oxides emissions averaging plan for the designated facilities that are located at that plant and that are subject to subpart Cb, except as specified in paragraphs (d)(1)(i)(A) and (d)(1)(i)(B) of this section.
>
> > (A) Municipal waste combustor units subject to subpart Ea or Eb cannot be included in the emissions averaging plan.
> > (B) Mass burn refractory municipal waste combustor units and other municipal waste combustor technologies not listed in paragraph (d)(1)(iii) of this section may not be included in the emissions averaging plan.
>
> (ii) The designated facilities included in the nitrogen oxides emissions averaging plan must be identified in the initial compliance report specified in §60.59b(f) or in the annual report specified in §60.59b(g), as applicable, prior to implementing the averaging plan. The designated facilities being included in the averaging plan may be redesignated each calendar year. Partial year redesignation is allowable with State approval.
>
> (iii) To implement the emissions averaging plan, the average daily (24-hour) nitrogen oxides emission concentration level for gases discharged from the designated facilities being included in the emissions averaging plan must be no greater than the levels specified in table 2 of this subpart. table 2 provides emission limits for the nitrogen oxides concentration level for each type of designated facility.

This subpart does not use the term "affected facility", but rather "designated facility" to define each individual combustor. But that does not stop the Agency from allowing emissions averaging. Note, however, the rule does not allow averaging outside the Subpart. We agree that emissions averaging should not cross a Subpart as the differing Subparts have different compliance deadlines.

EPA should not let these differing and uncertain terms restrict its application of emissions averaging, an concept that provides equal or better environmental outcomes while allowing sources to select the most cost-effective compliance strategies.

The preamble to the HON (Hazardous Organic NESHAP for the Synthetic Organic Chemicals Manufacturing Industry (SOCM)) provides EPA's rationale for the emissions averaging provisions. 59 Fed. Reg. 19425. It states that the Agency has broad discretion to define "source" and, in the case of the HON, it is defined as all emission points relating to SOCMI production at a facility. It allows all emission points that have numerical emission standards to participate in an average. Only equipment leaks, which have no defined allowable emission

level, are excluded. Process vents, storage vessels, transfer rack, and wastewater streams are all allowed and they all have differing emission standards.

EPA has all the latitude it needs to allow emissions averaging across all units at a given facility that are subject to a given Subpart, so long as they have an applicable numeric emission limit. EPA should follow the HON's provisions (see §63.150(e)) by setting up debit and credit equations to track twelve month moving average emissions.

IX. OPERATING PARAMETERS

A. Additional flexibility for operating parameter limits

EPA needs to allow for varying Operating Parameter Levels with load (e.g., sorbent injection rate) and fuel mix. The CISWI rules require development of operating parameter limits (OPLs) based on the values achieved during the performance test. In many cases, these levels will be appropriate only for certain modes of operation. For example, the absolute sorbent injection rate observed during the performance test conducted under full load and using the worst case fuel mix will not correlate to the sorbent injection rate necessary during startup or periods of lower load. Frequently, sorbent injection rates are set using a feedback loop from a CEMS or CPMS to avoid wasting sorbent. EPA has acknowledged in the Boiler MACT that the sorbent injection rate will vary with load, which allows sources to adjust the sorbent injection rate by a load fraction. However, as the fuel/waste mix during the initial performance test may differ from the typical day to day fuel/waste mix, EPA should also allow adjustments to sorbent injection rates based on fuel mix. For example, if an ERU is capable of burning both coal and biomass and tested at 100% coal firing for the mercury performance test, the carbon injection rate for periods of normal operation should not only be adjusted based on load but also by the percentage of coal being fired. If a boiler is burning natural gas or other clean fuel during a certain operational period, sorbent injection is not necessary.

B. All parametric monitoring requirements based on 30 day rolling averages

Subpart CCCC and DDDD proposed rule language requires either a 3-hour average basis for listed operating parameters or no specific time period except for oxygen as the operating parameter for demonstrating compliance with the CO emission limit (which is a 30-day rolling average basis). The proposed rule does specify use of 30-day rolling averages for CEMS compliance purposes. Use of 3-hour averages for operating parameters where CISWI units routinely modulate is simply unworkable. The 3 hour block averaging periods will cause operators to consider shutdown of units that have some bobble or short term problem with a parameter in an attempt to avoid a potential permit deviation. These shutdowns and restarts will result in more impact on the environment and plant operation. Use of 30-day rolling averages for all operating parameters as proposed by EPA in the Boiler MACT rule will allow operators to intervene and correct a problem without shutting down. We agree with EPA in their Boiler MACT discussion that major issues such as ESP transformer failure will show up in a 30 day rolling average and prevent continued operation with malfunctioning control equipment.

C. Additional Flexibility is Needed for Determining Appropriate Sorbent Injection Rates

The proposed rule requires development of operating parameter limits (OPLs) based on the values achieved during the performance test. In many cases, these levels will be appropriate only for certain modes of operation. For example, the absolute sorbent injection rate observed during the performance test conducted under full load and using the worst case fuel mix will not correlate to the sorbent injection rate necessary during startup or periods of lower load. Frequently, sorbent injection rates are set using a feedback loop from a CEMS or CPMS to avoid wasting sorbent. EPA has acknowledged that the sorbent injection rate will vary with load in Table 7 of the Boiler MACT rule, which allows sources to adjust the sorbent injection rate by a load fraction. That approach is not included in the CISWI rule, however, In addition, as EPA requires sources to test at the worst case fuel mix for chloride and mercury and this fuel mix may differ from the typical day to day fuel mix, EPA should also allow adjustments to sorbent injection rates based on fuel mix. For example, if a boiler is capable of burning both coal and biomass as well as solid waste, and tested with coal firing for the mercury performance test, the carbon injection rate for periods of normal operation should not only be adjusted based on load but also by the percentage of coal being fired. If a boiler is burning natural gas or other clean fuel during a certain operational period, sorbent injection may not be necessary. Therefore, additional flexibility needs to be allowed where justified based on fuel and operational requirements.

D. Additional flexibility is needed for other operating parameters

An allowance for operating parameter limit variation due to CISWI unit load fraction is also applicable to all CISWI units and operation parameters. Variations with load and other operating conditions also occur for other operating parameters- e.g., wet scrubber pressure drop, pH, and liquid flow rate, ESP voltage and secondary amperage. Flue gas flow rate and characteristics vary over load and with other operating variables such as fuel quality, to the extent that the single hourly average value determined during the high load steady state performance test will not apply to other conditions if overall performance is optimized. EPA should provide an allowance for any operating parameters to vary with unit load fraction as applicable to the operating parameter and specific affected source, and recognize that those operating parameters do not necessary vary in a linear relationship with load, e.g., pressure drop typically varies with the (flow).

X. STACK TESTING

Under the Final CISWI Rule, units were required to conduct stack tests on a frequent basis. 76 Fed. Reg. 31,981. While EPA has made some improvements to the stack testing requirements in the 2012 Reconsidered CISWI Rule, the frequency of testing is still unreasonable and burdensome. In its Petition for Reconsideration of the Final CISWI Rule, CIBO provided extensive comment on why stack testing is not reasonably related to environmental improvement and unnecessarily duplicates other compliance requirements.

XI. TITLE V PERMIT REVIEW CYCLE AND EMISSION TESTING REQUIREMENTS

EPA should ensure consistency in testing requirements for this Rule and 5-year Title V permit review cycle. EPA did not coordinate these provisions in the Proposed Reconsidered Rule. Annual compliance testing is extremely expensive and the benefits of conducting emission tests more frequently then every 5 years do not justify the costs.

A significant amount of testing will be required by sources to determine the compliance status with respect to the rule and to evaluate and select available control strategies. Capital projects to install necessary control equipment cannot proceed until the testing and evaluation is complete. Due to the high number of sources affected by the rule that have the same concerns, it is likely that availability of stack testing personnel and laboratory facilities to conduct tests will be limited, adding to the time required to complete this essential first step. As outlined below, annual frequent compliance testing requiring multiple test runs for purposes of compliance will further reduce the availability of testing and laboratory resources.

EPA acknowledges that the cost of testing small boilers and process heaters is prohibitive. While the cost of emissions testing larger units is less prohibitive, EPA must consider these costs when establishing the frequency of testing.

The benefits of testing more frequently than every 5 years do not justify the costs. HAP emissions change only when operating parameters change (e.g., firing rate, maximum contaminant input limits for chloride and mercury, type of fuel, combustion efficiency, oxygen content, etc.) or when design changes occur. Absent these changes to an affected source, operating parameters established by implementation of CISWI Rule are more than sufficient to ensure that emissions will not significantly change over time.

Other regulations support a 5-year testing cycle. For example, 40 CFR §75 requires low mass emissions units to establish NOx emissions curves based on testing conducted every 5 years. Several states require that testing be conducted upon each 5-year Title V permit renewal. All affected major sources subject to Boiler MACT are required to have Title V Permits. The Title V permitting program provides the appropriate vehicle to implement a 5-year test requirement.

XII. PARAMETRIC MONITORING PROVISIONS FOR ADDITIONAL CONTROL DEVICE TYPES

Parametric monitoring provisions are needed for acid gas controls including dry sorbent injection. Also, an option to use SO2 emission rate and a SO2 continuous monitoring system correlated to HCl emissions is needed. In the Proposed Reconsidered Rule, EPA, in response to Petitioners' requests, is soliciting comment on the need to specify monitoring provisions for dry sorbent injection and any other control devices not already addressed. 76 Fed. Reg. 80464.

Dry sorbent injection or spray dryer absorbers (using hydrated lime) are two technologies that could be used to reduce HCl and/or SO2 emissions. CIBO suggest a similar approach as in the Boiler MACT – (see Table 7). 76 Fed. Reg. 80668.

CIBO will take this opportunity to also request an alternative CPMS utilizing SO2 continuous monitoring. EPA solicits comment on petitioners' request to allow use of SO2 CEMS for demonstration of continuous compliance with the HCl emission limits for sources that are equipped with acid gas controls:

> While the EPA does not have enough information to propose specific requirements, we believe that a reasonable approach would be to allow for the use of SO2 CEMS provided that the source demonstrates a correlation between SO2 control and control of other acid gases emitted from each specific unit that chooses to use SO2 CEMS. Such a relationship is expected because the available add-on controls for acid gases would provide better control efficiencies for the acid gas HAP than for SO2, and, therefore, demonstration of SO2 control using CEMS would provide assurance that the acid gas HAP are being controlled. Therefore, the EPA is soliciting comment on the use of SO2 CEMS for demonstrating continuous compliance with the HCl emission limits with the condition noted above.

76 Fed. Reg. 80610. CIBO agrees with EPA's conclusions that acid gas HAP control efficiencies would be better than SO2 control efficiency (for a given acid gas control device) and that it should be possible to demonstrate a correlation between the two control efficiencies and then to rely on an SO2 CEMS to demonstrate continuous compliance. EPA drew this same conclusion in the recently finalized Utility MACT and set alternative SO2 emission limits.

In this case, CIBO agrees there is not enough information to set an alternative SO2 limit that correlates with the HCl emission standard, such as was done in Utility MACT. One key difference is that the Utility MACT HCl emission limit (0.002 lb/mmBtu) is about ten times lower than the proposed Boiler MACT HCl limit for solid-fuel boilers (0.022 lb/mmBtu).

CIBO would suggest in both the Boiler MACT and the CISWI rule that SO2 continuous monitoring be allowed as a continuous parametric monitoring system (CPMS) and that the maximum 30 day rolling average SO2 operating parameter limit to be set during a 3-run performance test where HCl emissions are demonstrated to comply with the final HCl emission limit. This method of continuous compliance should be allowed on any unit that utilizes an acid-gas control technology including wet scrubber, dry scrubbers, and duct sorbent injection.

If this option is incorporated into the Final Rule, we request that the SO2 CEMS be allowed to select either Part 60 or Part 75 for compliance procedures as many of the existing SO2 CEMS already use Part 75 quality assurance procedures.

XIII. PM CEMS/CPMS

PM CEMS have not been demonstrated for use on biomass or on other installations where fuel type, production rate or other characteristics of the emissions are changing. CIBO appreciates the fact that EPA recognizes that PM CEMS cannot effectively be used to measure particulate emissions accurately. However, EPA is proposing use of this instrument as a PM CPMS. However, for the same reasons that a PM CEMS is not practical for use in measuring PM, the PM CPMS will not provide any meaningful correlation to emissions or control device

effectiveness and therefore is a technically inappropriate choice. In addition to the fact that a PM CPMS will not correlate with emissions and cannot be used effectively in a PM CPMS, it is much more costly than devices that can perform the same function. Thus, EPA must abandon its proposal to require PM CEMS technology for a PM CPMS.

A. Boiler size clarification

CIBO asks EPA to confirm that the boiler size threshold for determination of whether or not a PM CPMS must be installed is the average annual heat input, i.e., annual heat input divided by the number of actual operating hours in the year. Similar to the Utility MATS rule, CIBO suggests that this value be determined using three consecutive years beginning after the compliance date to determine average annual heat input.

B. CPMS are not necessary

In the Proposed Reconsidered Rule, PM CPMS has replaced the requirement of a PM CEMS. CPMS is not optional for sources >250 MMbtu. Although EPA altered the monitoring requirement, it is still onerous and not necessary to demonstrate compliance. The CPMS equipment is the same as the prior CEMS requirement, which is a major capital installation not justified by any additional environmental or compliance benefit beyond other PM monitoring systems.

The PM limits for solid fuel boilers range from 0.028 lbs/mmbtu for stoker boilers to 0.088 lbs/mmbtu for fluidized bed boilers. Almost all fluidized bed boilers in the country have been permitted since the effective date of the 40 CFR Part 60 Subpart Db NSPS and will have allowable limits for PM no higher than 0.05 lbs/mmbtu. Also, since most new solid fuel boilers would also have been permitted under PSD or non-attainment NSR, their allowable limits are likely more in the range of 0.02 – 0.03 lbs/mmbtu. As such, COMs supplemented with bag leak detectors and pressure drop monitoring are perfectly adequate to prevent any exceedance of the existing allowable standards much less, the 0.088 lbs/mmbtu proposed for the MACT. The addition of a CPMS will be a needless expense and will offer no benefit. Likewise, stoker and PC boilers can be, and are in practice, adequately monitored by COMs and parametric monitoring.

C. PM CEMS have not been demonstrated on biomass-fired boilers or units that operate with variable fuel types and production loads.

PM CEMS have been demonstrated in practice on coal-fired utility boilers and at least one coal-fired industrial boiler. They have not been demonstrated on biomass-burning boilers. A review of all the types of PM CEMs and potential suitability for use on a biomass-fired boilers is problematic for a number of reasons.

PM CEMS do not measure mass. Because PM monitors do not measure mass directly, they must be calibrated against some manual, PM reference method measurement procedure like EPA Methods 5, 5i or 17. The fundamental problem arises when the characteristics of the emitted PM exhibit significant variability and this variability in the particulate properties translates into a shift or alteration in the instrument's calibration curve.

Biomass, as well as CISWI units, which combust a mixture of fuels and which operate at variable loadings pose significant challenges in establishing meaningful correlations. In order to establish a calibration curve, one needs to source test the emissions from the stack and correlate those to specific instrument readings.

As fuel and fuel mixes vary, particle size distributions generated vary significantly. Biomass combustion emission distributions are characterized by a bimodal particulate distribution.[12]

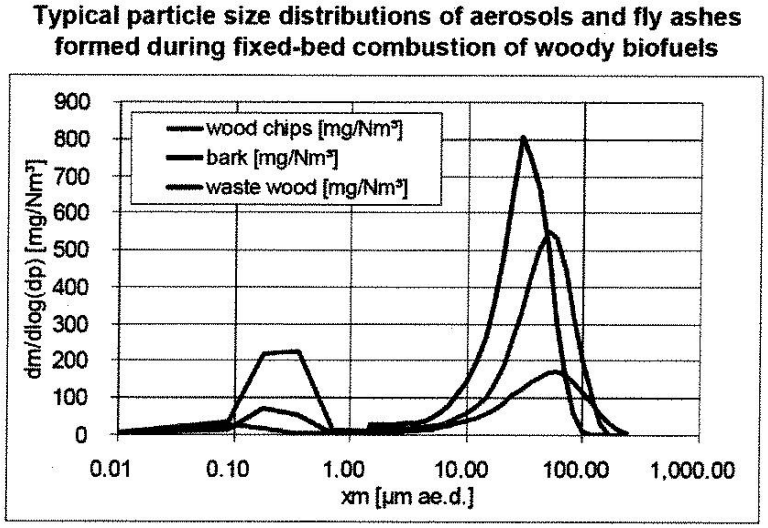

Figure 1. Typical Biomass Fly Ash Particle Size Distribution[4]
Note: Fly-ash means products of combustion

This is due to the vaporization of volatile ash species in the wood-like potassium and sodium biomass ash that yields a bimodal characteristic with peaks of nominally 0.5 and 20 to 40 microns. Coal ash, on the other hand, tends to exhibit a more mono modal distribution without the submicron peak. Data available for PM CEMs effective is primarily limited to coal, and data on how PM CEMS will respond to monitoring biomass emissions is expected to be problematic.

In addition to the variability of the fuels and fuel mixtures the operating load (firing rate) of the boiler will produce varying particulate loading which will challenge the robustness of any PM CEM correlation and calibration. This has been demonstrated during a study conducted by the Electric Power Research Institute (EPRI) of PM CEMS. The results of the study indicate that when inlet loading to ESP's are changed due to different fuel mixtures, the exhaust emissions have a different particle size and distributions. Therefore, a single or even a few correlation curves cannot be used to provide representative compliance correlations over an extensive range of fuels, fuel mixtures and loads. The results of the EPRI Study indicate that when a protocol is developed to simulate varying particle sizes and loads it results in inaccurate mass emissions estimates[13].

[12] "BIO-AEROSOLS – Aerosols in Fixed Bed Biomass Combustion," Presented by Professor Ingewald Oberberger, Ph.D., Graz University of Technology, Budapest, October 2003.
[13] The Varying Load Simulations in the EPRI study consisted of turning off fields in the ESP.

For units such as biomass units, which may use a variety of biomass materials and vary production, or for CISWI units, which combust a varying mixture of materials, testing every possible fuel mixture to develop calibration curves for each is infeasible, given the extensive range of possible fuel mixtures.

In practice, changing the fuel mix for the purpose of correlation testing may alter the loadings; however, it would be difficult to do in a systematic way, and in order to gather the reference data needed to develop an acceptable correlation. Thus, for variable fuel and production rate units with variable emission characteristics in the stack where the PM CEMs is being used as a monitor, we conclude that establishing meaningful curves, figuring out how to match those to the fuel and production mixes and finally correlating these with emissions in any meaningful way is impractical. Basically, for each fuel mix that may be used, one would need to be able to establish a correlation curve. Then, the instrument would need to use the right calibration curve for the proper fuel mixture in order for any meaningful correlation with particulate to be established. This solution is not technically feasible.

Beyond this, there are a number of correlation issues. For instance, the PM response to the light scattering instruments are very dependent on particle size, shape and even color. Other technologies have other limitations.

D. PM CPMS based on PM CEMS technology will not produce meaningful results.

For the same reasons that it is not feasible to develop a meaningful correlation between the emissions being monitored by the PM CEMS instrument and particulate emissions in the stack, using the PM CEMS instrument technology as a PM CPMS will produce no repeatable and no meaningful results in situations where the characteristics of the stack emissions change due to changes in fuel mixtures, production rates and instrument correlation issues.

The output from a PM CPMS based on a PM CEMS instrument will simply be meaningless. Any time the fuel mixture changes, the instrument will go out of range even with no change to control device effectiveness or any meaningful change to emissions. This means that requiring use of a PM CPMS would be a very expensive waste of capital resources and would send both the regulated industry and the regulatory agencies on meaningless goose chases. Put quite simply, this technology will not work for its intended purposes.

E. PM CEMS technology is expensive and thus there are much more meaningful approaches to ensuring control technology is operating as designed.

PM CEMS are not technically effective across a range of conditions as discussed above and are a very expensive method for achieving EPA's objective of assuring ongoing compliance with

Boiler MACT and CISWI requirements. Costs[14] for the light scattering PM CEMS, which is lower operating and maintenance costs vs the Beta Attenuation technology was estimated by EPA contractor data to cost between $103,000 to 133,000 in 2004, with substantial annual operating costs as shown below:

Table 3. Approximate Costs for Light Scattering PM CEMS [a]

	Cost Component	Cost	Total Cost
Initial Costs	Planning	$3,600	
	Select equipment	$10,400	
	Provide support facilities	$1,000 to $8,200	
	Purchase CEMS	$36,300 to $47,500	
	Install and check CEMS	$10,000	
	Initial correlation test	$25,200 to $37,100	
	Prepare QA Plan	$17,000	
	Total Capital Investment		$103,500 to $133,800
Annual Costs	Operation and maintenance	$13,000	
	Annual RATA (O_2 monitor)	$0 to $5,900	
	Quarterly absolute correlation audit (ACA)	$1,000 to $7,100	
	Recordkeeping	$7,600	
	Annual review and update	$1,000 to $4,500	
	Capital recovery	$14,800 to $19,100	
	Response correlation audit (RCA) [b]	$15,100 to $26,500	
	Total Annualized Cost		$52,500 to $83,700

a. Costs reported in year 2004 dollars by adjusting the year 2000 costs reported in Reference 1 using the *Chemical Engineering* Plant Cost Index for process instruments.
b. Cost estimate assumes one RCA performed each year. If less frequent RCA are required by the applicable rule (e.g., once every 18 months, once every 3 years), then annual costs for the PM CEMS will be lower.

The above costs are high in and of itself. However, these costs do not include what might be required to establish correlation curves for multiple fuel and work to try to find a way to make this technology work effectively in scenarios it has never been successfully applied. Given the range of fuels, production rates and other variables in a given installation that would have to be

[14] Status of Particulate Matter Continuous Emission Monitoring Systems for Application to Electric Utility Steam Generating Units, Prepared for: Emission Standards Division Office of Air Quality Planning and Standards U.S. Environmental Protection Agency, September 7, 2004.

accounted for, this cost is believed to be a small fraction of the true cost for applying this technology.

There are much more effective tried and true technologies that are currently used for assuring compliance that have been demonstrated to be effective in a variety of situations. For example, bag leak detection systems, baghouse pressure drop and many other technologies which EPA has included in their Compliance Assurance Monitoring Guidance would be much more effective and accurate indicators of problems with control technology. These tried and true and less costly approaches should be adopted to assure compliance. EPA should not force industry to use an unproven technology which is unlikely to be effective in a variety of situations when a simpler more elegant technological solution is already at hand.

For the above reasons, EPA must abandon its proposal to use PM CPMS as an indicator of effective operation.

F. Bag leak detectors

As an alternative to the extremely expensive particulate matter CEMS installation EPA proposes, EPA should allow the installation and operation of bag leak detection systems in accordance with the proposed rule's §63.7525(j)(1) through (8) in addition to the existing opacity monitors and pressure drop monitoring. The bag leak detection system provides ongoing monitoring of the bag house component performance and provides for continuous compliance demonstration.

Method 5 stack testing is performed at the rated capacity of the boiler. At this rated capacity, all systems for particulate control are maximized as well (e.g., the air/cloth ratio in the baghouse, the ID fan output, ductwork losses, etc.). Hence, for particulate matter, stack testing conditions are the worst case operating conditions. At lower loads, the basic design parameters for the particulate collection system and for the combustion air management are not as taxed so it would be reasonable to expect that at lower loads, particulate emissions on a lb/MMBTU basis would be lower than the stack test. If all systems that were operating during the stack test continue to operate properly during normal operation, continuous compliance with the stack test can be determined due to the nature of particulate matter emissions behavior. One CIBO member already operates and maintains PS1 certified opacity monitors on all three units as well as monitoring baghouse pressure drop.

XIV. OTHER DEFINITIONS

CIBO submitted comment regarding several unit subcategories, and provided supporting rationales in comments or in its Reconsideration Petition. In each case, CIBO supports EPA's proposed approach in the Proposed Reconsidered Rule. 76 FR 80460.

- The definition of cyclonic burn barrels and the decision to separate them from traditional incinerators is logical. They are difficult units to test and EPA is justified in not establishing standards as there is no emission data for them.

- EPA is also justified in not establishing standards for burn-off ovens. With several different types of units and a lack of data, it is not feasible to regulate these units under one set of standards.

- CIBO supports the exclusion of laboratory analysis units from the rule, on the basis of a lack of data and on the characteristics of these units. These are highly specialized units not likely to burn solid waste and too small and diverse to justify development of standards.
- EPA lacked data on space heaters and noted that they were not needed to meet EPA's section 112(c)(6) obligation, and therefore did not include them in the rule. CIBO supports that outcome based also on their very insignificant emissions would not justify the effort to inventory and develop standards for these units.

In the Proposed Reconsidered NHSM rule, EPA proposes an amended approach to thermal sand reclamation, with the result that thermal sand reclamation units will not be regulated as incinerators under CISWI. 76 Fed. Reg. 80,463. CIBO supports this outcome for the reasons noted in its Petition for Reconsideration and comments.