The Large Public Power Council

300 North Washington Street, Suite 405, Alexandria, VA 22314
703/740-1750 (phone) • 703/740-1770 (fax)
lppc@lppc.org

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Attn: Docket ID No. EPA-HQ-OAR-2009-0234;
Docket ID No. EPA-HQ-OAR-2011-0044
EPA Docket Center (EPA/DC)
U.S. Environmental Protection Agency
Mailcode: 2822T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: LPPC Comments on EPA's Proposed National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 76 Fed. Reg. 24,976 (May 3, 2011); Docket ID Nos. EPA-HQ-OAR-2009-0234, EPA-HQ-OAR-2011-0044.

Dear Sir or Madam:

As an association of 25 of the nation's largest locally owned, not-for-profit electric power systems, Large Public Power Council (LPPC) and its members have considerable expertise in implementing pollution control measures and have participated constructively in the past in regulatory proceedings undertaken by the Environmental Protection Agency (EPA). LPPC members provide reliable, affordable electricity to most of the 45 million customers in 11 states and Puerto Rico served by public power. Our members own and operate approximately 35,000 circuit miles of transmission lines and over 86,000 megawatts of generation, reflecting a balanced portfolio of renewable energy, fossil fuel, nuclear, hydropower, and other resources. Thus, LPPC has a strong interest in ensuring that the proposed National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units (Proposed Utility MACT) and the proposed amendments to the Standards of Performance for Fossil-

Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial Commercial-Institutional Steam Generating Units (NSPS)[1] will be consistent with federal Clean Air Act (CAA) requirements and consistent with our mission of providing public power customers with dependable and affordable electricity.

I. Comments on EPA's Standard-Setting Approach for Proposed Utility MACT.

A. *Proposed Utility MACT limits reflect some variability but should be further adjusted to account for fuel and operational variability.*

In the Proposed Utility MACT, EPA accounted for variability through its use of the upper prediction limit (UPL). Once EPA identified the lowest emitting sources, it then adjusted the initial MACT floor levels based on the UPL.[2] Similar to other MACT rulemakings for categories such as industrial and commercial boilers and Portland Cement, EPA calculated the UPL with the Student's t-test, which uses the TINV function in Microsoft Excel. Based on the average three sample runs collected during the second phase of the Information Collection Request (ICR), EPA's UPL equation strives to identify an interval that will, with a 99 percent degree of confidence, contain the next randomly selected observation from the population distribution.

While EPA has discretion in how to reflect variability in a MACT standard, EPA should consider adjusting the floors to reflect normal changes in operations and fuel in addition to the sample runs' test results in order to account for the actual operating conditions of the units, and thus the worst reasonably foreseeable circumstances. As proposed, the MACT floors consider testing variability and do not reflect operational variability. Operating conditions vary greatly and the MACT standards should reflect what units achieve in the real world. For example, differences in the chemical composition of coal, changes in combustion conditions as electric load fluctuates, and variability in the inert fraction of limestone supplied to scrubbers all can affect emissions.

[1] National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units; Proposed Rule, 76 Fed. Reg. 24,976, 25,041 (May 3, 2011).
[2] *Id.* at 25,042.

These typical circumstances are the type of variability Congress intended EPA to assess in its MACT standard-setting process.

According to the D.C. Circuit, the CAA's statutory requirements for setting the MACT floor authorize EPA to set a standard which reflects what the best performing units can achieve under "the worst reasonably foreseeable circumstances."[3] To account for the worst reasonably foreseeable circumstances, EPA is required to estimate the variability associated with all factors that impact a source's emissions, including operational and fuel factors.[4] However, the court also held that the EPA may only account for the worst reasonably foreseeable circumstances through use of data from the worst-performing sources when supported by factual data showing it to be a reasonable estimate or predictor of the actual variability of the best performers, as was shown in the *Mossville*[5] case.[6] In sum, the court's statutory interpretation demonstrates that EPA possesses the discretion to account for variability in setting the limits with only minimal restraints on how it may do so.

LPPC supports EPA's exercise of discretion to account for variability in the standard but recommends that the emission limits also reflect operational and fuel variability in addition to the UPL. EPA properly chose to consider variability in its setting of the MACT floor but did not consider all the sources of variability that could be reflected in the standards. LPPC suggests that EPA include these other factors to develop a more achievable standard.

B. *EPA should exercise its authority to include additional subcategories to make the Utility MACT limits more achievable for distinct subcategories of regulated units.*

In the Proposed Utility MACT, EPA includes five subcategories to establish the emission limits: units burning lignite coal; units burning other coals; IGCC units; liquid oil units; and solid oil-derived fuel units. LPPC encourages EPA to develop certain

[3] *Sierra Club v. EPA*, 167 F.3d 658, 665 (D.C. Cir. 1999).
[4] *Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 443 (D.C. Cir. 1980).
[5] *Mossville Environmental Action Now v. EPA*, 370 F.3d 1232 (D.C.Cir. 2004).
[6] *Sierra Club v. EPA*, 479 F.3d 875 (D.C. Cir. 2007) ("Brick MACT decision").

additional subcategories in the final Utility MACT to adequately reflect the diverse population of regulated sources. Specifically, LPPC suggests that EPA create separate subcategories for small Circulating Fluidized Bed (CFB) units, low capacity factor units, and for oil-fired units that distinguish between residual and distilled oil. In so doing, EPA would render the standards more achievable for distinct subcategories of units and reduce the number of potential plant closures while still advancing the goal of reducing overall emissions.

Section 112(c)(1) instructs EPA to establish "categories and subcategories" of sources for regulation under section 112.[7] Section 112(d)(1) then provides that EPA "may distinguish among classes, types and sizes of sources within a category or subcategory" when establishing MACT standards. These provisions give EPA 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 section 112(d). Nonetheless, section 112(c)(1)'s language directing EPA "to establish subcategories . . . as appropriate" without the inclusion of specific criteria limiting the agency's ability to do so confers broad discretion on the agency. Therefore, EPA may develop as many subcategories as it deems appropriate.

As noted above, in the Proposed Utility MACT, EPA established only five subcategories for all fuel-types; however, EPA established five subcategories of just coal type in its original Utility MACT in 2004.[8] In the Industrial Boiler MACT, EPA established fifteen subcategories.[9] Based on these examples, EPA has demonstrated its willingness to establish a substantial amount of subcategories in its past rulemakings. Moreover, historical testing has shown that coal rank has a significant effect on mercury

[7] Clean Air Act (CAA) § 112(c)(1); 42 U.S.C. § 7412(c)(1).
[8] Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 69 Fed. Reg. 4652, 4663 (Jan. 30, 2004).
[9] National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 76 Fed. Reg. 15,608, 15,612 (Mar. 21, 2011). EPA is reconsidering portions of the final rule, including one of the new subcategories that was not included in the proposal.

(Hg) and hydrogen chloride (HCl) emissions.[10] Therefore, given that EPA has wide latitude in the subcategories that can be created in a MACT standard and the impact coal rank can have on hazardous air pollutant (HAP) emissions such as Hg and HCl, EPA should consider developing more subcategories in the final Utility MACT if they can improve the achievability of the emission limits.

In addition to the current subcategories in the proposal, EPA should consider establishing a separate subcategory based on boiler design. In particular, EPA should create a separate subcategory for CFB units that are less than 150 MW. EPA states that CFB units have a "unique firing design" and "employ[] a fundamentally different process for combusting coal."[11] As a result, CFB units achieve very low emissions. The fluidized bed process introduces relatively large coal particles to a bed of sorbent or inert material at the bottom of the boiler through which sufficient air flow is introduced to result in the mixture becoming fluidized.[12] This bed also typically contains materials for absorbing sulfur dioxide (SO_2), whereas traditional coal-fired boilers burn coal suspended in the air. This technology difference creates inherently less Hg emissions than traditional coal-fired units. Therefore, EPA's inclusion of these unique and smaller CFB units in the MACT floor skews at least the Hg limit if not others.

Moreover, most CFB units are much smaller in size than other coal-fired boilers. While other coal-fired boilers have been manufactured in sizes up to 1,300 MW, CFB boilers currently have a maximum size of 300-350 MW gross, depending on the manufacturer. Therefore, the technology and size of CFB units differ enough to create substantial changes in emissions. This clear distinction warrants a separate subcategory for CFB units. At present, CFB units are included in the coal-fired subcategories in the

[10] U.S. Geological Survey COALQUAL database, V. 2.0, http://energy.er.usgs.gov/products/databases/CoalQual/index.htm.
[11] 69 Fed. Reg. at 4666.
[12] S.C. Stultz and J.B. Kitto, *Steam: Its Generation and Use*, 40th Edition, at 16-3 (Babcock & Wilcox). Notably, coal particles introduced into CFB boilers are sometimes as large as 1.25 inches in size – which is much larger than talcum-powder-size coal particles for pulverized coal units. Sufficient air flow is introduced from the bottom of the boiler – which results in the coal/sorbent (inert) mixture becoming fluidized. "Fluidization" refers to the condition in which solid materials are given free-flowing fluid-like behavior. As a gas is passed upward through a bed of solid particles, the flow of gas produces forces that tend to separate the particles from one another and suspend them, "floating," in the combustion chamber.

proposed rule, which results in unrealistically low emissions limits for other boiler types based on these differences.

In addition, EPA should develop a subcategory for low capacity factor units, with 30% or below capacity factor, used primarily for seasonal peaking. Low capacity factor units may be used for only part of the year, do not run continuously, are frequently dispatched as load-following units, and a larger fraction of their operating time will be devoted to startups and shutdowns in comparison to units with average capacity factors. As a result, their use of different operating cycles justifies a separate subcategory. In other MACT rules, such as the MACT for stationary compression ignition reciprocating internal combustion engines (RICE), EPA appropriately established "limited use" subcategories to account for units that only run for short periods of time.[13] According to the originally promulgated Industrial Boiler MACT, because "limited use boilers, when called upon to operate, must respond without failure and without lengthy periods of startup," a significantly large percentage of their annual operation will be devoted to maintenance and readiness testing than other commercial, industrial, or institutional boilers.[14] Therefore, limited use units with a capacity factor of 30% or less should get their own subcategory in order to distinguish their unique operating schedule.

Finally, EPA should create separate subcategories for distillate and residual oil. Distillate oil is a more refined product than residual oil and thus burns cleaner. Due to the high cost of distillate oil, however, six of the distillate oil ICR test sites report capacity factors of less than 1%. Use of residual oil, on the other hand, is significantly higher than use of distillate oil, with more than 40 units in the ICR using residual oil. Despite this discrepancy, EPA grouped emission results from both distillate and residual oil to determine the floor level. Furthermore, residual oil-fired units produce more particulate matter (PM) emissions, for example, than distillate oil-fired units even though some residual oil-fired units have controls and no distillate oil-fired units have controls in

[13] National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 9648 (Mar. 3, 2010).

[14] National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, Final Rule, 69 Fed. Reg. 55,218, 55,232 (Sept. 13, 2004) (vacated on other grounds).

the ICR pool. Based on these differences, EPA should have created subcategories within the oil category for residual and distillate oil.

Accordingly, LPPC urges EPA to exercise its discretion to create subcategories based on technology differences within each fuel-based subcategory and capacity. Specifically, LPPC supports EPA's development of subcategories for small CFB units, low capacity factor units, and distillate and residual oil-fired units.

C. *EPA's use of alternative MACT standards is consistent with the statute.*

In the Proposed Utility MACT, EPA includes alternative standards for several of the HAP surrogates. As an alternative to individual HAP limits, LPPC supports EPA's use of HAP surrogates and alternative standards for several of the HAP surrogates in the Proposed Utility MACT. The proposed rule listed the following surrogates: Total PM as a surrogate for non-Hg metallic HAPs (limit includes both condensable and filterable PM), HCl (or the alternative SO_2 for scrubbed units) as a surrogate for acid gas HAP, and carbon monoxide (CO), volatile organic compounds (VOC), and/or total hydrocarbons (THC) as surrogates for non-dioxin/furan organic HAPs.[15] These surrogates and alternatives provide a degree of flexibility, and LPPC supports EPA's efforts to provide the utility industry with options for compliance.

The D.C. Circuit has upheld EPA's authority to use surrogates in its MACT rulemakings. The court held in *Mossville* that "EPA may use a surrogate to regulate hazardous pollutants if it is reasonable to do so."[16] Similarly, in *National Lime II*,[17] the D.C. Circuit upheld EPA's use of surrogates in MACT rules as long as it is reasonable to do so and not contrary to law. In that case, the D.C. Circuit determined that EPA's use of a criteria pollutant, PM, was appropriate as a surrogate for metallic HAPs. Citing *National Lime II*, the Proposed Utility MACT references a three-part analysis for determining whether the use of PM as a surrogate for non-Hg metal HAP was reasonable. The D.C. Circuit found that PM is a reasonable surrogate for HAP if: (1) "HAP metals

[15] 76 Fed. Reg. at 25,023.
[16] 370 F.3d at 1242.
[17] 233 F.3d 625 (D.C. Cir. 2000).

are invariably present in . . . PM;" (2) "PM control technology indiscriminately captures HAP metals along with other particulates;" and (3) "PM control is the only means by which facilities 'achieve' reductions in HAP metal emissions."[18]

Armed with this discretion, EPA followed the course taken in other MACT rules by employing surrogates.[19] For example, HCl has been used as a surrogate for acid gases in Portland Cement MACT and the Industrial Boiler MACT rules.[20] In the Proposed Utility MACT, EPA's use of surrogates demonstrates the agency's recognition that emissions testing can cover multiple pollutants simultaneously and that surrogates help eliminate costly and redundant testing. As a result, LPPC supports EPA's use of surrogates in the Proposed Utility MACT.

In addition, EPA included alternative standards for certain subcategories and emission limits. In particular, the agency established the following alternative standards: SO_2 as an alternative equivalent to HCl for all EGUs within all subcategories with add-on flue gas desulfurization systems; individual non-Hg metallic HAPs as an alternate to Total PM for all subcategories except liquid oil-fired units; total non-Hg metallic HAPs as an alternate to PM for all subcategories except the liquid oil-fired subcategory; and individual metallic HAPs as an alternate to total metal HAPs for the liquid oil-fired subcategory. For the first time, EPA also set SO_2, a commonly measured criteria pollutant, as an alternative to HCl in the Proposed Utility MACT. However, state permitting has allowed the use of SO_2 as a surrogate in the HAP context. For example, Virginia has allowed SO_2 to account for acid gases in the case-by-case permitting process.[21] Because EPA has discretion to employ tools for flexibility such as surrogates, this discretion also would extend to setting alternatives as well.

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[18] 76 Fed. Reg. at 25,021 (citing *National Lime II*, 233 F.3d at 639).
[19] *Id.* at 25,023.
[20] National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 75 Fed. Reg. 54,970 (Sept. 9, 2010); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Proposed Rule, 75 Fed. Reg. 32,005 (June 4, 2010); National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers; Proposed Rule, 75 Fed. Reg. 31,895 (June 4, 2010).
[21] Cypress Creek MACT Analysis, Appendix E (February 2010) at 3-21 to 3-23, *available at* http://www.deq.virginia.gov/air/permitting/Cypress-Creek/docs/ODEC-Final-MACT_2-26-10.pdf.

D. *EPA should consider all available emissions data to establish the Utility MACT limits.*

The proposed Hg limits are based on data from only those plants that provided Hg testing information in Phase I of the ICR. In contrast, the emission limits for HCl and PM are based on data from all units submitting data under the ICR. Section 112(d)(3)(A) requires EPA to set limits for existing sources based on "the average emission limitation achieved by the best performing 12 percent of the existing sources (*for which the Administrator has emissions information*)."[22] According to this language, Congress intended the agency to use the emissions information in its possession when developing MACT standards. Although this language could be interpreted to mean that EPA need not perform exhaustive testing and sampling, it does not excuse EPA from declining to consider data already at the agency's disposal, which would include *all* data collected from the ICR and not just selective test data from one particular phase of the ICR process.

Moreover, EPA used emissions data from all sources in the EGU pool when setting HCl and PM emissions limits, confirming at least that EPA possessed emissions information for those units. In the proposed rule, EPA listed 1091 units in the coal-fired $\geq$ 8300 Btu/lb subcategory for PM and HCl and 1061 units for Hg.[23] EPA includes the other 30 units for Hg emissions in "Subcategory 2," which is for coal-fired units designed for coal < 8300 Btu/lb.[24] Accordingly, the proposed MACT floors for PM and HCl contained 131 units, or 12% of those units in the subcategory.[25] The MACT floor for Hg in that subcategory, however, contained only 40 units, or roughly 4% of the sources in that subcategory.[26] EPA explains this discrepancy by noting that those 40 units were the top 12% of the units for which EPA had Hg data.[27]

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[22] CAA § 112(d)(3)(A); 42 U.S.C. § 7412(d)(3)(A)(emphasis added).
[23] 76 Fed. Reg, at 25,045 (Table 12).
[24] NESHAP MACT Floor Analysis for Coal- and Oil-fired EGUs - REVISED, EPA-HQ-OAR-2009-0234-9858 (May 18, 2011) at 3 [hereinafter *MACT Floor Memo*].
[25] *Id.*
[26] *Id.*
[27] 76 Fed. Reg. at 25,023.

As the language in section 112(d)(3)(A) demonstrates, EPA should consider data from *all* sources for which it has data and not just those that performed Hg testing. It also is important to note that EPA requested testing of the best performing units and thus, the pool itself is not a random selection but instead the "best of the best." For instance, as mentioned above, EPA relied on roughly 4% of total sources to calculate its new source emission limit for Hg when it depended on 40 units out of 1,031.[28] EPA had 330 units with Hg data in the ICR data set and selected the top 12% from that portion of units rather than using data from all units that participated in the ICR.[29] Moreover, EPA stated that it only used data from the Part II test data for Hg emissions tested on or after 12/2007 through 12/2009 in the MACT floor variability calculation, further proving that EPA only used limited data to get the "best of the best."[30] While LPPC does not expect EPA to go above and beyond what is required by the statute, EPA should consider *all* the available information at its disposal to set limits that accurately depict what the best performers in the source category achieve.

E. *EPA's HAP-by-HAP standard-setting approach for the proposed new source Utility MACT limits is not consistent with the statute and not mandated for existing sources.*

When developing the proposed emission standards for the Utility MACT, EPA performed its floor-setting analysis on a pollutant-by-pollutant basis which is inconsistent with the statute and will preclude the construction of new, reliable coal-fired units. Specifically, EPA's proposed HAP-by-HAP standard-setting approach does not meet the statutory requirement to base new source standards on the "best controlled similar source" and instead results in a "Franken source" that could never be built. For existing sources, although EPA has greater latitude regarding how the agency interprets the standard-setting requirement in section 112(d)(3), EPA's HAP-by-HAP approach does not consider what the top performing 12% achieve in practice. To address these issues, LPPC recommends that EPA use an approach for standard-setting that more accurately reflects what actual best performing sources achieve.

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[28] *MACT Floor Memo* at 3.
[29] *Id.*
[30] *Id.* at 9.

New Sources. Section 112(d)(3) requires EPA to set the MACT limit for new units at a level no "less stringent than the emission control that is achieved in practice by the best controlled similar *source*."[31] Congress undoubtedly intended "*best controlled similar source*" to mean that the limit should be set based on the overall emissions from an actual source and not the composite of the lowest emissions from multiple sources. In fact, Congress provided express limits on EPA's authority to parse units and sources for purposes of setting standards under section 112.[32] That limited authority does not allow EPA to "distinguish" units and sources by individual pollutants as is proposed in this rule. Therefore, EPA's HAP-by-HAP approach for setting the new source standards is inconsistent with the statute because it does not reflect what the best controlled similar source in each category can achieve.

As a result of the pollutant-by-pollutant approach, the top performers used to set the various new source standards are not the same and do not account for real world conditions or technology configurations. EPA has stated that the MACT process should identify the best performing "objective, duplicable control"[33] technology. By determining which technology is "best performing," EPA enables other sources to implement these controls and reduce their emissions. EPA's HAP-by-HAP approach in the proposed rule does not identify a specific technology that is, or even technologies that are, the "best performing." This approach, therefore, does not identify the control technology that other sources can adopt to reduce emissions.

In *Cement Kiln Recycling Coalition v. EPA*, the D.C. Circuit held that the CAA requires EPA to set the MACT floor based on the emission level actually achieved by the best performers.[34] EPA's standard-setting approach has not done this. Rather, EPA's methodology creates a "Franken source" that would never be built. The agency used a variety of sources as the "best similar source" for *each* pollutant. The standards

[31] CAA § 112(d)(3); 42 U.S.C. § 7412(d)(3) (emphasis added).
[32] *Sierra Club v. EPA*, 551 F.3d 1019, 1028 (D.C. Cir. 2008).
[33] *Cement Kiln Recycling Coalition v. EPA*, 255 F.3d 855, 863 n.57 (D.C. Cir. 2001).
[34] *Id.* at 861.

developed by EPA clearly represent the "best controlled similar *sources*" instead of the best controlled source and no single unit can achieve the limits as statutorily mandated. Consequently, EPA acted contrary to the CAA statutory directive to pinpoint the single best controlled similar source in developing its MACT limits for new sources. Furthermore, it is nearly impossible to identify from EPA's own MACT Floor Analysis which specific units are the best performers for each individual pollutant—as well as the control technology in use at that unit. LPPC suggests that EPA determine the best controlled similar source and develop the emission limits based on that source rather than set unrealistic and unachievable limits that even the top performers cannot meet.

Existing Sources. Similar to EPA's MACT standard-setting approach for new sources, EPA's proposed existing source standards are derived from a pollutant-by-pollutant approach that does not reflect what actual sources achieve simultaneously for all three pollutants. Although EPA has discretion to interpret section 112(d)(3) and establish standards for existing sources, EPA's proposed approach does not consider the antagonistic effects caused by concurrent use of various control technologies. EPA did not take realistic circumstances into account when setting existing source standards for Hg, HCl, and PM. Therefore, LPPC recommends that EPA reconsider its approach to setting standards for existing units in light of real world pollution control technology configurations.

Pursuant to section 112(d)(3), emissions standards for existing units "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 – the average emission limitation achieved by the best performing 12 percent of the existing *sources*."[35] According to this section, EPA should set its standards based on *sources*. These provisions make clear that standards must be based on *actual* sources and not the product of a pollutant-by-pollutant determination resulting in a set of composite standards that do not necessarily reflect the overall performance of any actual source. Although EPA has more latitude in its interpretation of this provision, the agency still must ground its approach in what actual

[35] CAA § 112(d)(3); 42 U.S.C. § 7412(d)(3) (emphasis added).

existing sources achieve in practice. At present, EPA's proposed standards for existing sources derive from a phantom "Franken source" created by the emissions data from separate units.

Furthermore, not only did EPA's pollutant-by-pollutant approach take the top performing emission levels from separate units, but it also did not consider the effects of competing control technologies and the antagonistic effects of those technologies. For example, 47 of the 131 sources used to calculate the existing source Total PM limit only had baghouses installed to control for PM but no scrubbers.[36] Other units also have dry sorbent injection (DSI), which is used to control for HCl but also emits additional PM. Therefore, nearly a third of the units tested did not reflect the negative impact that these additional controls would have on PM baghouse controls. Similarly, units with DSI using sodium carbonate (trona) as a sorbent also create complications for units using activated carbon injection (ACI) to control for Hg. The trona injected into the flue gas competes with the Hg to bond with the carbon from the ACI. Because 47 of the units only had baghouses, the units tested did not accurately account for this antagonistic impact on Hg emissions from additional controls. Therefore, the standards do not accurately reflect all controls' impacts on emissions, and units cannot practicably comply with a standard that has no basis in reality. LPPC recommends that EPA reconsider its standards for existing sources in light of the likelihood that affected units will use multiple controls to comply.

F. *Work practices for organic HAP and dioxin/furan emissions are appropriate and consistent with the requirements in section 112(h).*

EPA is proposing work practice standards for organic HAPs, including dioxin/furan, on the basis that organic HAP emissions data are below the detection limit for EPA test methods. LPPC supports EPA's use of work practices for organic HAP and dioxin/furan emissions as consistent with the criteria set forth in section 112(h) of the CAA but suggests that EPA extend its requirement for tune ups to every 24-30 months.

[36] *See* EPA MACT Floor Analysis-Coal HAP Metals (Mar. 16, 2011), http://www.epa.gov/ttn/atw/utility/utilitypg.html.

Section 112(h) states that the Administrator may set work practice standards if it is "not feasible to prescribe or enforce an emission standard."[37] The statute defines this phrase to mean, among other things, that "the application of measurement methodology to a particular class of sources is not practicable due to technological *and* economic limitations."[38]

In the proposed rule, EPA explains that work practice standards were selected for organic HAP, including dioxin/furan emissions, given that the data of these emissions were below the minimum detection level (MDL) for the test method. In fact, EPA even required sources to perform tests longer than usual in its 2010 ICR, and the data obtained from dioxin and furan testing were still mostly below the MDL.[39] Given the technological infeasibility of measuring at such low levels and the additional cost of requiring longer testing, EPA met the statutory criteria for applying section 112(h) work practices.

However, even though LPPC supports work practice standards, LPPC recommends that EPA require boiler tune ups only every 24-30 months. At present, the rule requires tune ups every 18 months.[40] Many EGUs now utilize a 24-month or longer planned boiler outage schedule, and a timeframe longer than 18 months for the required tune ups, such as 24-30 months, would account for these planned outage cycles. For units that run with longer than 30-month planned outage cycles, permitting authorities should have the flexibility to allow for even longer periods between boiler tune ups. Given the realities of compliance with the work practice standard, EPA should allow this additional time and continue to include work practice standards in the final Utility MACT.

Additionally, some of the requirements listed under the items required as part of the boiler tune up are unclear and do not reflect the use of modern operational controls that keep combustion conditions within a range of parameters to meet compliance with

[37] CAA § 112(h); 42 U.S.C. § 7412(h).
[38] CAA § 112(h)(2)(B); 42 U.S.C. § 7412(h)(2)(B) (emphasis added).
[39] 76 Fed. Reg. at 25,046.
[40] *Id.* at 25,117 (proposed § 63.10021(a)(16)).

emission requirements for oxides of nitrogen (NO_x) and carbon monoxide (CO). EPA should revisit the requirements of the boiler tune up to ensure that they are clear and compatible with modern boiler operations.

G. *EPA should include an approach in the final rule to address the routine practice of blending fuels.*

As currently proposed, EPA's emission standards do not address how the rule would apply to coal-fired units that are permitted to blend fuels. While the preamble states that an EGU burning coal "(either as a primary fuel or a supplementary fuel), or any combination of coal with another fuel . . . is considered to be coal fired under this proposed rule,"[41] the proposed regulatory language is unclear. Specifically, the definitions provided for the different subcategories of sources covered by the emission standards could be interpreted to include the same coal-fired sources in cases where there is an affected source that is blending solid oil-derived fuel (*e.g.* petcoke) and coal. LPPC suggests that EPA include in the final rule a provision that clearly states that the standards applicable to coal-fired units apply in cases even where a source is blending fuels.

According to the proposed definition of "oil," the materials covered include "crude oil or petroleum or a fuel derived from crude oil or petroleum, including distillate and residual oil, solid oil-derived fuel (*e.g.* petcoke) and gases derived from solid oil-derived fuels (not meeting the definition of natural gas)."[42] "Unit designed to burn solid oil-derived fuel subcategory" is defined in the proposed rule as "any EGU that burned a solid fuel derived from oil for more than 10.0 percent of the average annual heat input during the previous 3 calendar years or any one of those calendar years, either alone or in combination with other fuels."[43] Given these definitions, if a coal-fired unit burns more than 10 percent petcoke, it could be considered part of the solid oil-derived fuel subcategory.

[41] *Id.* at 25,020.
[42] *Id.* at 25,123.
[43] *Id.* at 25,124.

Notwithstanding the above, the definition of "coal-fired electric utility steam generating unit" seems to suggest that burning both coal and petcoke, in any amount, could be included in the coal-fired subcategory. Specifically, the proposed rule defines a coal-fired EGU as a unit that "burns coal or coal refuse either exclusively, in any combination together, or in any combination with other fuels in any amount."[44] To address the potential confusion for sources blending fuels, LPPC recommends that EPA clarify in the final rule that sources meeting the definition of coal-fired EGU, *i.e.*, burning coal in any amount, comply with the standard applicable to coal-fired units. This approach would resolve any confusion as to which emission standard applies.

II. Comments on Compliance Requirements for Proposed Utility MACT.

A. *Compliance with proposed MACT emission limit for PM presents specific challenges.*

In the Proposed Utility MACT, PM is used as a surrogate for non-Hg metallic HAPs.[45] EPA states that it has chosen such a surrogate because the same control techniques can reduce both pollutants,[46] and the use of PM as a surrogate will "eliminate the cost of performance testing to comply with numerous standards for individual non-Hg metals."[47] However, the use of a Total PM surrogate creates a different set of measurement problems and costs. The Total PM limit of 0.030 lbs/MMBtu includes both filterable and condensable PM.[48] The inclusion of condensable PM has the effect of increasing the stringency of the PM rate of 0.030 lbs/MMBtu, as compared to a numeric PM emission rate that applies only to filterable PM emissions. The Total PM standards also pose problems because condensable PM is very difficult to measure.

Facilities that elect to use Total PM as a surrogate for non-Hg HAPs will need to install a PM Continuous Emissions Monitoring System (CEMS). EPA noted in the preamble to the proposed rule that requiring PM CEMS is a "reasonable monitoring

[44] *Id.* at 25,122.
[45] *Id.* at 25,027.
[46] *Id.* at 25,039.
[47] *Id.* at 25,045, 25,060.
[48] *Id.* at 25,052

option" but requested comment on the application of PM CEMS, and more particularly on "the use of data from such systems for compliance determinations."[49] It is problematic to use PM CEMS data to measure compliance with a rule imposing a limit on Total PM. The CEMS technology differs significantly from the technology EPA uses to set the Total PM standard. A PM CEMS monitors only filterable PM emissions, not condensable emissions. The limits for PM will then be established by PM performance tests, which measure both filterable and condensable particulates. This creates a "floating limit" in which a facility will be measuring filterable particles with its CEMS, but its actual limit is based on the performance testing which measures Total PM. EPA has acknowledged in stakeholder discussions that this method of calculation may be challenging and has requested comment.

The Total PM standard is impracticable because it will be difficult for sources to plan for changes to the limits resulting from performance testing. Under the proposed rule, the PM numeric rate limit of 0.030 lbs/MMBtu would be adjusted downward based on the PM emissions source testing for the unit. There are two possible interpretations of the proposed rule that would result in this outcome. One interpretation would require the PM limit to be adjusted based on the proportion of Total PM emissions that are condensable PM. If, for example, 50 percent of the Total PM emissions is condensable PM and the other 50 percent is filterable PM at a particular unit, then the applicable PM CEMS numeric limit for that unit would be reduced to 0.015 lbs/MMBtu. The other interpretation would require the PM limit to be set at the actual filterable PM emissions rate measured during the initial and subsequent PM performance tests conducted for the unit. Under either approach, the conversion of the Total PM numeric rate limit into a filterable PM standard that a PM CEMS can monitor will require sources to readjust their compliance level after each performance test.

The proposed limits for PM also do not allow for variability because they are based on the particular conditions of one stack test for condensable PM. When setting a MACT standard, variability must be taken into account. EPA has therefore erred in not

[49] *Id.*

introducing a factor that can represent variable operating conditions if it chooses to use a standard based on stack testing alone. Moreover, because each test is time-consuming and costly, EPA cannot expect facilities to feasibly perform numerous stack tests.

As proposed, the "floating limits" will create uncertainty in the regulated community and will be detrimental to the application of the Utility MACT. In light of the measurement problems caused by a Total PM limit, LPPC requests that EPA change the PM surrogate standard from a Total PM standard to one based on filterable PM. This will be a more manageable way to measure PM because it will allow for a clearer target that will not change as operating conditions change.

Total PM is the surrogate for non-Hg metallic HAPs even though the only non-Hg metal of concern in even partial vapor phase at flue gas outlet temperatures is selenium (Se).[50] While some Se may be emitted as a vapor, more than two-thirds of Se emissions are captured with fly ash particles.[51] In addition, at flue gas temperatures of 240ºF and below (any unit with a scrubber will have flue gas exhaust temperatures well below 200ºF), at least 96% of Se will be in the solid phase.[52] Because Se is the only non-Hg metallic HAP with a possibility of being a condensable particulate and the large majority of Se is captured with fly ash particles, there is no reason to include a standard for condensable PM HAPs. EPA should use filterable-only PM as the surrogate for non-Hg metallic HAPs.

In the alternative to using filterable PM as a surrogate for non-Hg HAPs, LPPC suggests that EPA devise a process such that the PM limits as measurable by the CEMS will not be subject to change based on the results of each performance test, and a variability factor is introduced to account the isolated stack testing conditions.

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[50] Matthew S. DeVito and Rachel J. Carlson, *Selenium Sampling and Analysis in Coal Combustion Systems,* PREPRINTS OF PAPERS, AMERICAN CHEMICAL SOCIETY, DIVISION OF FUEL CHEMISTRY; Volume 40; Issue 4; Conference 210 at 813 (Aug. 1995).
[51] Anders W. Andren, David H. Klein and Yair Talmi, *Selenium in Coal-Fired Steam Plant Emissions,* ENVIRONMENTAL SCIENCE AND TECHNOLOGY at 856.
[52] DeVito and Carlson, *supra* note 50, at 816.

A related issue that EPA has not addressed in the proposed rule is the effect of the HAP-by-HAP standard-setting approach and the resulting PM limits. This issue is discussed in greater detail in Section I. E. of these comments, but in short: the units that were used to set the PM floor are not representative of all units because of antagonistic impacts between control technologies. Simply put, a stringent limit on Hg or HCl will result in increased levels of other HAP because of the interaction among the different control technologies. Because EPA failed to look at simultaneous achievement of the limits across pollutants in setting the proposed MACT levels, the standards are artificially low and cannot be reasonably met. If EPA reopens a discussion of an appropriate way to address PM, the agency should also address the PM antagonistic impact issue.

B. *Proposed Utility MACT emission limits would apply <u>at all times</u>.*

In the Proposed Utility MACT, EPA requires that sources comply with the proposed emission limits at all times, including during periods of startup, shutdown, and malfunction (SSM). Malfunction would provide an affirmative defense against a compliance violation if certain criteria are met,[53] but a violation is presumed in any period during which limits are exceeded. This approach to SSM periods is not workable.

EPA did not incorporate data from SSM events into setting the MACT floor, and therefore the application of the proposed MACT standards during such periods is inappropriate. The test run data used to set the MACT standards do not reflect startup, shutdown, or malfunction periods. The test run data consist solely of three 1-hour test runs, which were used to set the MACT floors. Each of the test runs reflect normal operating conditions, and thus the MACT floors were set using only emissions information reflecting normal operating conditions.

It is not possible to apply the data from the MACT floors to wholly different conditions during SSM and then require that sources meet limits based on such normal operating conditions. As is standard in the industry, and in accordance with

[53] *See* 76 Fed. Reg. at 25,097 (proposed §§ 63.10001, 63.10042).

manufacturers' guidelines and good engineering practices, some pollution control equipment does not operate at peak efficiencies during periods of SSM, and some cannot operate at all during startup or shutdown periods. Because of these operational differences, it is not practicable to expect facilities to meet the same stringent standards as would be required when equipment is fully functioning.

In the proposed rule, EPA states that EGUs do not normally startup and shutdown frequently and typically use cleaner fuels during the startup period. On that basis rather than on the basis of actual reported data, EPA has determined not to differentiate periods of SSM.[54] However, EPA did not sufficiently account for load following or load cycling facilities in its analysis. Load following or load cycling plants will startup and shutdown on a much more frequent basis, thus undergoing additional periods of SSM. EPA's analysis is therefore flawed: its conclusion rests on the fact that SSM *may* not occur very often for units that do not follow load and *may* not lead to additional emissions. These assumptions do not support that it is appropriate or practicable to require sources to meet a continuous standard. Indeed, even if EPA is correct that some units experience infrequent periods of SSM, this can lend credence to the argument that a properly formulated work practices standard will preserve environmental integrity while simplifying reporting and emissions requirements for regulated sources.

In regard to malfunction in particular, EPA determined that "malfunctions should not be viewed as a distinct operating mode and, therefore, any emissions that occur at such times do not need to be factored into the development of CAA section 112(d) standards, which, once promulgated, apply at all times."[55] However EPA summarily dispatches precedent of the D.C. Circuit, which states that standards that factor in the variability of emissions under all operating conditions are reasonable.[56] Thus, it would be reasonable for EPA to base the proposed MACT standards on data that include instances of malfunction, or at least factor in some level of probable malfunction over time.

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[54] 76 Fed. Reg. at 25,028.
[55] *Id.*
[56] *Mossville*, 370 F.3d at 1242.

EPA should not be able to simultaneously promulgate new emissions standards that do not take periods of malfunction into account when setting the MACT floor because it deems using such data infeasible,[57] and yet still require compliance with the resulting strict standards during periods of malfunction. In the preamble, EPA notes that "nothing in CAA section 112(d) or in case law requires that EPA anticipate and account for the innumerable types of potential malfunction events in setting emissions standards."[58] However, just because EPA is not required to account for *every* conceivable malfunction does not mean that it can set standards excluding data of *any* malfunction event, and then require regulated sources to meet the standards even in the midst of malfunction.

While EPA has noted that it will provide some leniency for sources that do not comply with emissions standards because of malfunction,[59] this leaves sources with uncertainty about whether they would be penalized and could make them vulnerable to citizen suits. In short, although LPPC appreciates that EPA's proposal states that not all malfunctions will result in violation, regulated sources are still subject to significant EPA and state discretion concerning such occurrences and hold the burden of proving an affirmative defense.

EPA also notes that the D.C. Circuit vacated portions of two provisions in EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM[60] and uses that decision as a basis for requiring adherence to the proposed MACT standards at all times.[61] However, the D.C. Circuit vacated only the SSM exemption contained in 40 C.F.R. § 63.6(f)(1) and 40 C.F.R. § 63.3(h)(1), the general provisions of the MACT regulations, and did so because EPA had removed the requirement for SSM plans. Thus,

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[57] 76 Fed. Reg. at 25,028.
[58] *Id.*
[59] EPA states that, "in the unlikely event that a source fails to comply with the applicable CAA section 112(d) standards as a result of a malfunction event, EPA would determine an appropriate response based on, among other things, the good faith effort of the source to reduce the likelihood that malfunctions would occur, minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions." *Id.* at 25,028.
[60] *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), *cert. denied*, 130 S. Ct. 1735 (2010).
[61] 76 Fed. Reg. at 25,028.

the court found the particular EPA plan in effect for addressing SSM to be flawed, not on an understanding that SSM must always be treated exactly the same way as normal operating conditions. Indeed, EPA is still able to address SSM periods separately from the source-specific MACT regulations of 40 C.F.R. § 63.

Furthermore, the statutory language of the CAA gives EPA the flexibility in section 112(h) to address emissions that are not suited for general MACT requirements under certain circumstances. Periods of SSM fit within the circumstances described in the statute. Section 112(h)(1) states:

For purposes of this section, if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard for control of a hazardous air pollutant, or pollutants, the Administrator may, in lieu thereof, promulgate a design, equipment, work practice, or operational standard, or combination thereof … In the event the Administrator promulgates a design or equipment standard under this subsection, the Administrator shall include as part of such standard such requirements as will assure the proper operation and maintenance of any such element of design or equipment.

In section 112(h)(2), the statute defines the phrase "not feasible to prescribe or enforce an emission standard" as any situation where the EPA Administrator determines that "(A) a hazardous air pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any federal, State, or local law, or (B) *the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.*"[62]

In the instant case, EPA should propose a work practices standard during SSM periods because the Proposed Utility MACT emissions standards are simply not practicable. The data collected during such SSM periods come from CEMS, which is continuously running. Such data do not include all of the pollutants regulated under the

[62] CAA § 112(h)(2)(A)-(B); 42 U.S.C. § 7412(h)(2)(A)-(B) (emphasis added).

CAA, and in particular do not contain data on Hg from certain kinds of CEMS. Therefore, facilities may need to engage in other types of monitoring techniques in order to retrieve all the data EPA is requesting during these time periods. In addition, the application of the Proposed Utility MACT is not economically practicable during periods of SSM because it would involve significantly altering measurement techniques such that they could be applied during SSM periods, and may also require manual monitoring.

The appropriate treatment of SSM periods is to apply a work practices standard. EPA has done so in other MACT rules.[63] For malfunctions, a source should have to address the malfunction as soon as safely practicable. LPPC supports EPA's use of an affirmative defense regarding malfunction to increase flexibility, but the best approach to the standard is simply to require facilities to follow good operating practices during these periods. Facilities have no incentive to ignore a malfunction in their equipment because they have emissions limitations from a variety of programs that require the correct monitoring of emissions. This is especially true in the case of criteria pollutants that are used as surrogates in the proposed rule. Thus, it is not necessary, and indeed is counterproductive, to require that sources monitor their emissions and comply with strict MACT limits when experiencing a malfunction. To the contrary, the best approach is to require such sources to follow a work practices standard that ensures problems are addressed as soon as safely practicable.

C. *Compliance with the Utility MACT emissions standards through CEMS should be demonstrated on a 12-month rolling average basis to improve achievability.*

The proposed emission limits in the Proposed Utility MACT are to be calculated based on a 30-day rolling average for Hg, PM, and HCl if using CEMS. In contrast, EPA has promulgated several MACT standards that have applied a 12-month rolling average for demonstrating compliance with emission standards. Such other MACT standards include the boat manufacturing MACT standard, which was based on a 12-month rolling

[63] *See e.g.* National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 9648, 9653 (Mar. 3, 2010); National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 51,570, 51,574 (Aug. 20, 2010).

average[64] and the magnetic tape MACT[65] standard, which also contained a 12-month rolling total, while requiring facilities to calculate HAP usage monthly.

Under the CAA, EPA has discretion to shape the compliance periods and averaging timelines when establishing MACT limits. As in previous proposals, EPA should require sources to demonstrate compliance on the basis of a 12-month rolling average rather than on a 30-day rolling average. Under a 12-month rolling average, facilities must still meet compliance reporting requirements every month but are allowed to account for normal seasonal variability in electricity use, and thus in emissions. The use of such 12-month rolling averages therefore can provide additional flexibility for strict standards and assist with compliance. It also helps to limit violations that would result from the normal seasonal variation in emissions, thereby promoting overall compliance with the rule. For these reasons, EPA should adopt a 12-month rolling average compliance period.

D. *Timeframe for compliance with final Utility MACT is not sufficient.*

EPA has requested comment on the ability of sources subject to the rule to comply within the three-year window and the possible one-year discretionary extension.[66] The compliance deadlines provide an inadequate amount of time to design, finance, permit, install, and test add-on controls at large numbers of affected sources nationwide.[67] The stringency of the emission limits in the Proposed Utility MACT will require most, if not all, existing EGUs to install add-on controls, including wet and dry scrubber

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[64] National Emissions Standards for Hazardous Air Pollutants from Boat Manufacturing, 66 Fed. Reg. 44,218, 44,220 (Aug. 22, 2001). The final rule states: "Compliance with the emissions limits in the final NESHAP is based on a 12-month rolling average except when an add-on control device is used. At the end of every month, you determine compliance for each operation based on the HAP content and material consumption data collected over the past 12 months. When an add-on control device is used, compliance is determined through emissions testing and subsequent monitoring."

[65] *See* Standards for Hazardous Air Pollutant Emissions From Magnetic Tape Manufacturing Operations, Final Rule, 59 Fed. Reg. 64,580 (Dec. 15, 1994); Standards for Hazardous Air Pollutant Emissions From Magnetic Tape Manufacturing Operations, 64 Fed. Reg. 17,465 (Apr. 9, 1999) (corrections).

[66] 76 Fed. Reg. at 25,057.

[67] Section 112(i)(3) of the CAA contains the compliance schedule for existing sources. Section 112(i)(3)(A) requires that the EPA Administrator establish a compliance date of no later than 3 years after the effective date of the rule, but section 112(i)(3)(B) gives the EPA Administrator or an approved state program the authority to issue a permit that granting a extension of up to one year to comply, "if such additional period is necessary for the installation of controls."

technology, use of sorbent injection, and upgrades and/or replacements of existing particulate controls.

The experience of LPPC members has been that it often takes longer than three years to install control equipment, even when faced with significantly less complicated circumstances than those that will result from the final Utility MACT. For instance, a simple SCR installation took three and a half years after the technology and design was chosen. Other estimates are that the installation of a scrubber can typically range from 40 to 60 months.[68] The timing for SCR installation also excludes any greenhouse gas emission analysis, which may be required in future installations and would increase the overall time needed for permitting and installation. Facilities also may be required to install baghouses or other PM control technology. When one also includes procurement and financing of equipment and labor in the timeline, the total required time for retrofits can be closer to 68-72 months, in many cases. In making assumptions about timing, EPA has particularly underestimated financing, procurement, and consulting time. Because the expenditures needed to install such pollution control equipment will be so large, the time it takes to secure proper approval and financing will often be lengthy. In addition, when retrofitting plants to add such controls under the Utility MACT, industry will be facing severe labor and material constraints, adding to the time required.

It is, therefore, likely that many of the sources affected by this rule may need an additional year for compliance. Such additional time should be granted by EPA pursuant to its authority under section 112(i)(3)(B) of the CAA and the implementing regulations at 40 C.F.R. § 60.6(i)(4)(i)(A), which state that additional time can be provided if "necessary for the installation of controls." As noted above, the installation of such add-on emission controls will require a number of months, and despite EPA's contentions to the contrary,[69] three years will not be a sufficient timeframe to undertake all the activities leading up to the installation of such add-on controls, especially when such a large

[68] LPPC believes that 40 to 60 months is a reasonable estimate of the time necessary to design, permit, fabricate, and install scrubbers based on actual retrofit experience of LPPC members, and that periods longer than 60 months could be necessary under certain case-specific circumstances.
[69] 76 Fed. Reg. at 25,054.

number of regulated sources will need to rely on the same vendors to provide the add-on control equipment and the same contractors to perform installation and equipment tests.

In addition, as EPA acknowledges,[70] utilities are subject to a number of other concurrent EPA rulemakings. The need to address control technologies exists not only for the Utility MACT and criteria pollutant NSPS under section 111, but also for a rulemaking under section 110(a)(2)(D) regarding the interstate transport of emissions contributing to ozone and PM air quality programs, new requirements for coal combustion wastes, the implementation of section 316(b) of the Clean Water Act (CWA), and a rulemaking for emissions of greenhouse gases under section 111. All these agency actions contribute to significant competition for limited supplies and contractors and thus magnify the already difficult compliance challenges. EPA states that it wishes to "allow industry to comply with its obligations under these rules as efficiently as possible and to do so by making coordinated investment decisions and, to the greatest extent possible, by adopting integrated compliance strategies."[71] The ability to integrate compliance for the various concurrent EPA rulemakings for EGUs will be hampered by the short compliance deadline for utilities, especially because much of the pollution control technology may not even be able to be installed and delivered within EPA's proposed compliance timeframe.

In short, the need to install and test a variety of controls on a large number of facilities nationwide will make compliance with the Proposed Utility MACT within the three-year deadline extremely difficult and in many instances will make compliance completely infeasible when coupled with other regulatory obligations. Prior to retrofitting with any such technology, many units will need to conduct emissions testing, which will be have to be performed by a limited number of contractors thereby creating additional bottlenecks. Moreover, the tie-in of the new pollution control equipment at many units will need to be staggered and carefully planned to ensure reliability as such retrofits will need to be done in part with the sources offline.

[70] *Id.* at 25,057.
[71] *Id.*

EPA acknowledged some of these issues and agreed that it will be difficult for some sources to comply with the rule within three years. By offering additional time for compliance up front as well as streamlining the process for obtaining such time, EPA would reduce the costs for regulated sources while also encouraging the development of new and creative technologies that could provide superior emission reductions. Therefore, EPA should act pursuant to its extension authority under the CAA and allow a blanket one-year extension of the compliance deadline. There is precedent for the extension of a compliance period when faced with challenging compliance issues. For instance, the final MACT for the Pulp and Paper Production category included an eight-year compliance period.[72] The Miscellaneous Organics Chemical Manufacturing (MON) MACT also was extended in a settlement between EPA and industry after a court challenge that modified the rule.[73]

In addition, the MACT standards promulgated for Marine Tank Vessel Loading Operations gave owners and operators an additional year to comply. In the proposed Marine Tank Vessel rule, EPA had proposed that compliance with the MACT standards occur within three years,[74] but the agency then lengthened the compliance deadline in response to comments received. In March 1995, EPA reopened the comment period to request feedback on extending the proposed compliance dates.[75] In the preamble to that final rule, EPA explained that the agency received a large number of comments stating that the length of the compliance period was insufficient, in part because of the limited number of contractors and the large number of facilities that would be required to install control equipment,[76] both of which also are the case for EGUs affected by the Utility

[72] 63 Fed. Reg. 18,519.
[73] *See* Clean Air Act Citizen Suit, Notice of Proposed Settlement, 70 Fed. Reg. 61,814 (Oct. 26, 2005). Available at: http://www.gpo.gov/fdsys/pkg/FR-2005-10-26/html/05-21368.htm. The proposed settlement states: "(3) Within 30 days of the date the comment period on the proposed amendments closes, EPA will take final action on the proposed 18 month compliance extension; and (4) Within 150 days of the date the comment period on the proposed amendments closes, EPA will sign a notice of final rulemaking." *See also* National Emissions Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing; Proposed Rule, 70 Fed. Reg. 73,098, 73,100 (Dec. 8, 2005); National Emissions Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing, Final Rule 71 Fed. Reg. 40,316 (June 14, 2006).
[74] 60 Fed. Reg. 48,390.
[75] 60 Fed. Reg. 12,703.
[76] 60 Fed. Reg. at 48,392.

MACT. In addition, in promulgating the Marine Tank Vessel MACT, EPA took into account that under previous regulations it had not been possible to install all of the necessary controls within three years.[77] Sources that will be regulated under the Proposed Utility MACT are similarly constrained because the installation of scrubbers can often take up to five years.

In the Marine Tank Vessel MACT, EPA noted the widespread compliance challenges and the inefficiency of requiring all sources to apply for one-year extensions, stating in the preamble to the final rule that:

Section 112(i) of the Act specifically allows EPA to provide sources with a waiver of up to 1 year to achieve full compliance with the requirements if they can show that the additional period is necessary for installing the controls. Commenters stated that standards containing similar compliance dates for a large number of sources would result in numerous facilities competing for a limited number of experienced contractors in order to meet the standards at the same time . . . commenters also stated that many sources would require more than 3 years to install the required control equipment given the limited number of contractors . . . the Agency agrees with the commenters that many MACT sources would probably require 1-year waivers if there was a 3-year compliance date for MACT sources in the final rule . . . the Agency believes that the sources controlled under section 112 that are not controlled under section 183(f) should automatically receive a waiver of 1 year.[78]

The same compliance challenges that prompted EPA to give an extension of time for the Marine Tank Vessel MACT apply on a larger scale in the Utility MACT. There will be competition for a limited number of firms that can install and test the required pollution control equipment, creating bottlenecks. In addition, as in the Marine Tank Vessel MACT, even under the best of circumstances it can take longer than three years to install and test scrubbers and other emissions control devices. As noted, EPA has acknowledged that some sources would require additional time to comply because of the

[77] *Id.*
[78] *Id.*

need for the control technology industry to ramp up quickly.[79] Thus, LPPC requests that EPA offer a blanket extension of time to all sources that are required to comply with the Utility MACT.

Alternatively, if EPA chooses not to offer an extension to a large number of sources at once, EPA should strive to streamline individual extension requests. Currently it is possible for affected units to apply for a one-year extension of the compliance deadline based on individual circumstances by following the process outlined in 40 C.F.R. § 63.6(i), which addresses what a source must do in order to apply for an extension. This process explains that the Title V permit would be amended to include any extension granted and also would include any additional conditions imposed along with the extension. The regulations allow the state permitting authorities to grant the extension if there is an approved permit program. States can also terminate the extension of compliance if a unit fails to meet any specification.

The application process for such an extension is time-consuming. Because so many of the sources covered under the Utility MACT will need to apply for additional time, it will lead to a large degree of administrative duplication and waste and divert resources that could be used to work toward compliance. If EPA does not issue a blanket extension reflecting the inability of sources to install and test the required equipment within three years, it should at the least make efforts to streamline, simplify, and expedite the process of applying for an extension to minimize the burden on regulated sources. This could include a process whereby a source is guaranteed an extension if several criteria are met.

Under the CAA it is also possible for sources to utilize a two-year Presidential exemption. Section 112(i)(4) of the CAA states that the President "may exempt any stationary source from compliance with any standard or limitation under this section for a period of not more than 2 years." The factors for such Presidential exemption include the absence of needed technology and the national security interests of the country. A

[79] 76 Fed. Reg. at 25,055.

Presidential exemption can be extended for "1 or more" additional periods of not more than two years each. EPA should strive to develop procedures for issuing Presidential exemptions on a unit-by-unit basis and to coordinate its statutory exemption authority and the use of Presidential exemptions in order to ensure continued electric reliability in areas most affected by these regulations. EPA should include in its final rule the specific criteria needed to secure a Presidential exemption, if necessary.

In sum, LPPC would like to reiterate that three years is simply not enough time for the owners of many of the sources affected by the Utility MACT to adequately plan for, finance, undertake, and test the retrofits necessary to comply with the proposed rule. Without additional time, the Proposed Utility MACT could cause substantial disruption to the operation of many facilities and therefore negatively impact the reliability of the electric grid.

E. *Emissions averaging option for compliance with the Utility MACT should have more flexibility.*

EPA included an emissions averaging option in the Proposed Utility MACT, consistent with emissions averaging in similar MACT standards.[80] EPA proposed that a source "demonstrate compliance by emissions averaging among the existing EGUs in the same subcategory" and proposed that averaged emissions be equal to or less than the applicable emission limit.[81] A program of emissions averaging under previous MACT rules has been upheld by the D.C. Circuit.[82]

LPPC supports the use of emissions averaging as a useful way to maintain environmental integrity while reducing the costs of compliance and supports EPA's general statement that it encourages the use of flexible compliance approaches. However, despite EPA's belief that emissions averaging, "can provide sources the flexibility to comply in the least costly manner while still maintaining regulation that is

[80] 76 Fed. Reg. at 25,053. EPA notes that it has a general policy of "encouraging the use of flexible compliance approaches where they can be properly monitored and enforced."
[81] *Id.* at 25,108 (proposed § 63.10009).
[82] *Natural Resources Defense Council v. EPA*, 489 F.3d 1364 (D.C. Cir. 2007).

workable and enforceable,"[83] the structure of the emissions averaging provisions in the Proposed Utility MACT is too rigid to lead to significant flexibility or cost reductions. In addition, EPA's inflexible structure is simply not needed because no environmental harm will result from averaging: all of the facilities that participate in averaging would still collectively be subject to the same emissions limit, and therefore all required reductions would occur.

The Proposed Utility MACT limits the use of averaging in a number of ways. First, only units in the same subcategory can use the emissions averaging option. This shrinks the universe of sources that can apply emissions averaging. Second, new facilities cannot participate in emissions averaging. This puts new generation capacity at a disadvantage and further reduces the effectiveness of any averaging program. While EPA insists that it is most effective to "integrate state-of-the-art controls into equipment design and to install the technology during construction of new units,"[84] EPA does not recognize that such controls can be extremely costly, and one way to assist new facilities in moving forward with such controls is to allow them to average the emissions with their other facilities that may be less well-controlled. Third, units subject to the NSPS would have to continue to comply with the individual PM limits in that rule even if the emissions averaging option is used.

In addition, under the emissions averaging approach, an emissions averaging plan[85] must be submitted 180 days prior to compliance and approved. This lengthy lead-time will also limit the effectiveness of the emissions averaging program, as it will require facilities that may not yet have finished installation of their control technology to formulate their averaging plan. LPPC would like to suggest that EPA include more flexibility in the timing of the emissions averaging plan.

EPA has also requested comment on whether to impose a discount factor,[86] such as the discount factor of 10% used in the Industrial Boiler MACT, on units using the

[83] 76 Fed. Reg. at 25,053.
[84] *Id.*
[85] *Id.*
[86] *Id.*

emissions averaging option. Such a discount factor is not appropriate in this case and would have a negative impact on the usefulness of the emissions averaging option. As EPA itself notes, "affected sources are more homogenous [in the Utility MACT program], making emissions averaging a more straight-forward analysis. Further, with the monitoring and compliance provisions that are being proposed, there is additional assurance that the environmental benefits will be realized."[87] Thus, a discount factor is not appropriate in this instance.

LPPC therefore supports the emissions averaging concept, but advocates revising the restrictions to allow new units and units in different subcategories to average their emissions. LPPC also recommends demonstrating compliance on a yearly basis, as has been the standard for other MACT rules. In addition, LPPC requests that averaging plans not be required so far in advance of the compliance date, and that a discount factor not be applied.

F. *Units should not be subjected to operating limit requirements if using a CEMS.*

For regulated pollutants under the Proposed Utility MACT that require a CEMS, the proposed rule would mandate that source *also* establish operating limits and require performance testing.[88] This requirement is duplicative because a CEMS will adequately measure the levels of emissions. The proposed rule also would require testing for all pollutants, even pollutants for which a surrogate is being used. EPA must revise such redundant requirements. If a source is using CEMS for compliance, operating limits should not be required, and if a surrogate is being utilized and tested, there is no reason a facility also should conduct testing for the regulated pollutant.[89]

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[87] 76 Fed. Reg. at 25,053.

[88] The preamble notes that "for units using certified emissions monitoring systems (CEMS) that directly measure the concentration of a regulated pollutant under proposed 40 CFR part 63, subpart UUUUU (e.g. Hg CEMS, SO_2 CEMS, or HCl CEMS) or sorbent trap monitoring systems, the initial performance test would consist of all valid data recorded with the certified monitoring system in the first 30 operating days after the compliance date." *Id.* at 25,029.

[89] *Id.* at 25,103. Proposed § 63.10000(c)(1) states that regulated entities must measure all pollutants. This would mean that pollutants are being measured even when a surrogate for such pollutant has been employed.

LPPC notes that there appears to be confusion about such standards in both the preamble to the proposed rule and the regulatory language itself. Such language must be changed to note that testing is not mandated for pollutants being controlled through a surrogate, and performance standards are not required when a CEMS is employed. Currently the preamble to the proposed rule states, "for units using CEMS to measure a surrogate for a regulated pollutant, (*i.e.* PM CEMS), initial stack testing of the surrogate and regulated pollutant conducted during the same compliance test period and under the same process (*e.g.*, fuel) and control device operating conditions would be required, and an operating limit would be established."[90] The clause that states "and an operating limit would be established" should be removed because it is duplicative of the CEMS requirement.

In short, EPA should remove the operating limit requirements for facilities that install CEMS because doing so will reduce the cost and administrative burden of the proposed rule without sacrificing human health benefits or environmental integrity. The CEMS system is set up to continually monitor the level of emissions and will be able to fully capture a picture of the source's compliance without imposing unnecessary costs on sources. A requirement to demonstrate compliance in a second form through an operating limit is burdensome and unnecessary. Likewise, EPA should remove any requirements to test for the underlying pollutants being controlled through a surrogate because such tests are redundant and unnecessary for compliance with the Proposed Utility MACT.

III. Overview of Potential Impacts on Power Generation Sector From Proposed Utility MACT Compared to Benefits of Rule.

EPA has solicited comments on the effects of the Utility MACT on existing units as well as on the power sector as a whole.

A. *Impact on EGUs.*

A number of studies have been undertaken to estimate how many coal-fired EGUs would retire as a result of EPA's Transport and Utility MACT rules. These studies,

[90] *Id.* at 25,029.

conducted by a range of types of institutions, make different assumptions about compliance costs and the resulting impacts on coal-fired generation capacity. Seven studies[91] predict retirements of coal-fired EGUs in the range of 5 to 65 GW in 2015, with six of the seven studies predicting retirements of 35 GW or higher. The largest impacts result from the Proposed Utility MACT rule. EPA's estimate of the retirements associated with these two rules, 11.2 GW (1.2 GW from the proposed Transport Rule and 10 GW from the Utility MACT), is 3.5 to 6.5 times lower than six of the seven studies. This may indicate that EPA's assumptions regarding the technologies necessary for compliance with the Utility MACT and their associated costs need to be reconsidered. LPPC encourages EPA to re-examine its technology assumptions and methodologies to ensure the best estimate of the costs and impacts of the rulemaking.

The amount of premature retirements is not the only major impact of the proposed rule. Notably, EPA estimates that the proposed rule would affect "approximately 1,200" existing coal-fired EGUs and would cost the electric power sector $10.9 billion annually in 2015.[92] Based on EPA's own cost projections, the proposed MACT rule would easily be one of the most expensive clean air rules ever imposed on coal-fired power plants.[93] These very high cost impacts are another major factor that EPA must kept in mind when evaluating the impacts of the proposed rule and weighing these costs against the benefits of the rule.

B. *Impact on development of new generation.*

EPA's approach of using different sources to establish the individual HAP limits results in a large number of new coal plants not being able to meet the new source MACT

[91] Credit Suisse: *Growth From Subtraction* (Sept. 2010); NERC: *2010 Special Reliability Scenario Assessment* (Oct. 2010); Black & Veatch: *What Will Be the North American Energy Industry's "New Normal"?* (Nov. 2010); Brattle Group: *Potential Coal Plant Retirements Under Emerging Environmental Regulations* (Dec. 2010); Charles River Associates: *A Reliability Assessment of EPA's Transport Rule and Forthcoming Utility MACT* (Dec. 2010); FBR Capital Markets: *Coal Retirements—Is DSI the Magic Bullet for Coal Generators?* (April 2011); Bernstein Research: *Surviving the Train Wreck: The Impact of EPA's Mercury and Air Toxics Standards* (May 2011).

[92] U.S. EPA Fact Sheet: Proposed Mercury and Air Toxics Standards (May 4, 2011).

[93] According to EPA, the annualized cost of the proposed coal combustion residuals rule is $1.47 billion (2009$); the annualized cost of the proposed section 316(b) rule is $319 to $386 million (2009$); the 1998 NOx SIP call is estimated to cost $1.38 billion in 2007 (1990$); and the acid rain program is estimated to cost $3.0 billion/year in 2010 (2000$).

standards in the Proposed Utility MACT—standards which are supposed to be based on those very sources. This fact raises an important question of whether any new coal plants will be able to meet the new source MACT standards.

Such an outcome would be contrary to the language in the CAA. Section 112(d)(3) requires the standard for new sources to be based on the control levels achieved by the "best performing similar source" in operation. EPA instead chose to develop the new source MACT standards on a pollutant-by-pollutant basis where a different coal-fired EGU was identified as the best performing similar source for each HAP. None of the new coal plants that have been permitted and commenced operation with advanced pollution control technologies in the past several years can meet the proposed new source MACT standards. A recent technical analysis by American Electric Power[94] showed that of the 27 new coal-fired EGUs that have case-by-case MACT permit limits established under section 112(g), not one would comply with all of the proposed new source MACT limits.[95] New source MACT standards should be based on the best performing similar source (not an amalgam of sources) as required by the CAA. Achievable new source MACT standards will allow fuel diversity within the electric power sector to be maintained.

C. *Many of the benefits of the proposed MACT rule are not quantified (except for PM and Hg), are unclear, and are, therefore, difficult to evaluate.*

While health and environmental benefits are difficult to quantify, EPA estimates that the Utility MACT will provide annual monetized benefits (in 2007$) of between $58 to $140 billion using a 3% discount rate and $53 to $130 billion using a 7% discount rate.[96] More than 99% of these amounts are attributable to co-benefits from reductions in $PM_{2.5}$-related mortality. EPA also provides the benefits that could not be monetized, including benefits for Hg and other HAPs. For Hg, EPA's health effects analysis shows improvements in IQ (*e.g.*, 500 IQ points in total) with health benefits in the range of $4.1

[94] *See* Comments of American Electric Power on the Proposed Utility MACT Rule (Aug. 4, 2011).
[95] EPA itself has confirmed this conclusion by providing information to Unions for Jobs and the Environment demonstrating that no unit from among the ICR data achieves all of the proposed new source MACT limits. *See* Unions for Jobs and the Environment, Comments on Utility MACT Rule, at 5-8 (July 8, 2011).
[96] 76 Fed. Reg. at 25,077.

to $5.9 million using a 3% discount rate and $450,000 to $ 890,000 using a 7% discount rate.[97] Recent estimates of emissions from coal-fired units show a substantial reduction in Hg from 2000 to the present (29 tons/yr). Given this, EPA may be overestimating the benefits of Hg emission reductions associated with the rule.

With regard to the PM benefits noted above, another consideration is that 99% of those benefits are based on emissions reductions in areas already achieving the annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) of 15 ug/m^3.[98] In other words, virtually all of the $PM_{2.5}$ reductions for which EPA is claiming benefits are occurring in areas with air quality levels that are already intended to be protective of human health with an ample margin of safety based on EPA's own health-based ambient air quality standard set for $PM_{2.5}$. EPA should explain what additional PM benefits are derived from the Proposed Utility MACT.

Although EPA estimates the costs of the rule to be $10.9 billion annually, EPA's analysis may underestimate the cost of compliance as well. For example, the cost analysis is premised on the assumption that DSI, along with a baghouse, will enable a source burning bituminous coal to meet the HCl limit. This assumption ultimately may not be realistic. Instead, wet scrubbers will most likely need to be installed in order to meet the new limits for those plants that burn bituminous coal. This will increase the cost of the rule, as well as the number of plants that would be subject to retirement because they will be unable to comply. EPA should revise the cost estimates to reflect how sources are likely to comply with the standards.

[97] *Id.* at 25,078 (Table 28).
[98] *See* U.S. EPA, "Regulatory Impact Analysis of the Proposed Toxics Rule: Final Report," at 6-88-89 (March 2011).

IV. Comments Related to EPA's Regulation of *All* HAP Emissions from Coal and Oil-Fired EGUs Under Section 112(d).

A. *EPA's regulation of all HAP emissions from coal and oil-fired EGUs under section 112(d).*

EPA interprets the statute and judicial precedent[99] as requiring regulation of *all* HAPs emitted by a major source listed pursuant to section 112(c) of the CAA—referred to as the "in for one, in for all" requirement. Based on this statutory interpretation, EPA has taken the position that the "in for one, in for all" requirement also should apply to EGUs and has proposed MACT standards that would regulate all HAPs emitted from the source category.

While EPA's current view is one interpretation of the statutory text, it is not the only interpretation that the agency could adopt. A credible argument could be made that the "in for one, in for all" rule should not apply to EGUs. The principal basis for this argument is that unlike other categories of HAP sources, Congress treated EGUs differently. Under this interpretation, it would be appropriate for EPA to exercise its regulatory discretion if the agency determines that the HAPs emitted by EGUs do not pose a hazard to human health.

Section 112(n)(1)(A) required EPA to study HAP emissions from EGUs to determine "the hazards to public health reasonably anticipated to occur as a result of emissions" from that category of sources.[100] Based on the study, EPA was instructed to develop a report to Congress on the emissions from EGUs and then make a determination as to whether regulation of EGUs under section 112 was "appropriate and necessary." Thus, section 112(n)(1)(A) accords EPA discretion to address the specific public health risks identified in EPA's Utility Study. Section 112(n)(1)(A) requires EPA to regulate "*under this section*" only if regulation is found to be "appropriate and necessary." Section 112(n)(1)(A) does not specify that regulation must proceed under section 112(d).

[99] *See* National Lime Ass'n v. EPA, 233 F.3d 625, 633-34 (D.C. Cir. 2000).
[100] CAA § 112(n)(1)(A); 42 U.S.C. § 7412(n)(1)(A).

An argument could be made, therefore, that the CAA accords EPA with the discretion to regulate EGUs using strategies other than emission standards in section 112(d) and authorizes EPA to rely on other subsections of section 112(d), such as health-based emission limits under section 112(d)(4), when regulating emissions from this source category.

Based on this alternative interpretation of statutory text, EPA also could regulate EGUs using alternative control strategies identified by the agency pursuant to the requirement in section 112(n)(1)(A) that EPA "develop and describe" alternative control strategies for emissions which may warrant regulation under section 112. If Congress meant for EPA to have one sole regulatory option, *i.e.*, regulation of EGUs only under section 112(d), then the development of alternative control strategies would be rendered a meaningless requirement because the MACT provisions of section 112(d) follow a rigid statutory approach which excludes many options for control. Furthermore, these alternative control strategies can serve as a basis for more flexible regulation under section 112(n) that is most appropriate for addressing identified human health risks.

Furthermore, with this alternative interpretation of the statute, EPA also would have discretion over which HAPs to regulate. Section 112(n)(1)(A) treats EGUs differently from other source categories in that a finding must be made as to the public health hazards "reasonably anticipated to occur as a result of" EGU emissions before regulation of those emissions is determined to be "appropriate and necessary." Thus, court precedent relating to regulating all HAPs from source categories under section 112(d) would not be controlling for the regulation of HAP from EGUs given that EPA's statutory authority to regulate HAP emissions from EGUs is separate and distinct.

To the issue of whether all HAPs emitted by EGUs warrant regulation, EPA already made the determination in the December 20, 2000 finding that regulation of HAP emissions from coal and oil-fired EGUs under section 112 is "appropriate and necessary" due to Hg emissions from the source category.[101] EPA also noted that other HAPs may

[101] *Id.*

pose a potential concern to public health and stated that emissions of these substances "may be evaluated further during the regulatory process."[102] Given that EPA made no regulatory finding that these additional HAP pose a risk to public health at the point of the original listing decision for EGUs, an argument could be made that section 112(n)(1)(A) does not require EPA to set MACT standards for *all* HAP emissions from the source category. Based on this interpretation of the statute, LPPC believes it would be appropriate for EPA not to regulate any HAP emitted from EGUs for which EPA has determined that there are no adverse health effects from exposure to emissions of that HAP with an ample margin of safety.

B. *Comments on the "appropriate and necessary" standard set forth in section 112(n)(1)(A).*

In December 2000, EPA determined that regulation of EGUs is "appropriate and necessary" under section 112(n)(1)(A) based on a finding that "electric utility steam generating units are the largest domestic source of *mercury* emissions, and *mercury* in the environment presents significant hazards to public health and the environment."[103] In the proposed MACT rule, EPA is now seeking to supplement the 2000 finding with additional support for the "appropriate and necessary" determination. LPPC is not taking issue with EPA's finding that it is "appropriate and necessary" to regulate non-Hg HAPs from EGUs under section 112 based on risks posed to human health. Rather, LPPC is providing some general comments and observations on the standard that, if EPA were to apply when making a determination under section 112(n)(1)(A) to regulate EGUs, would help to ensure the establishment of legally defensible emission requirements.

1. "Appropriate" prong of section 112(n)(1)(A) analysis.

In performing the "appropriate" assessment, the statute does not specifically authorize EPA to make its determination based on sources of HAP emissions other than EGUs. A determination as to whether regulation of EGUs is "appropriate" would closely adhere to the statutory language and therefore be most legally defensible if the

[102] Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Steam Generating Units, 65 Fed. Reg. 79,825, 79,827 (Dec. 20, 2000) (emphasis added).
[103] 65 Fed. Reg. at 79,828.

determination was based only on the HAP emissions from the EGU source category. According to section 112(n)(1)(A), EPA is authorized to regulate EGUs only after the consideration of the "hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units of pollutants listed under subsection (b)."[104]

Focusing the "appropriate" prong of the analysis on the EGU source category also comports with the other components of whether it is "appropriate" to regulate EGUs. For example, EPA notes that the agency can consider hazards posed by any single HAP or combination of HAPs for purposes of determining whether regulation is "appropriate." This determination is within the context of the EGU source category and does not include other sources. Specifically, EPA states: "Nothing in section 112(n)(1)(A) suggests that EPA must determine that every HAP emitted by EGUs pose a hazard to public health or the environment before EPA can find it appropriate to regulate EGUs under section 112."[105] In addition, looking at HAP emissions beyond the source category does not fit with EPA's approach of considering the availability of controls to address HAP emissions from EGUs, which is one of the justifications EPA provides for regulating EGUs under section 112.[106]

For these reasons, the "appropriate" part of EPA's analysis under section 112(n)(1)(A) to regulate EGUs would closely conform with the statutory requirements and therefore be legally strengthened if the determination is based on the HAP emissions from EGUs and not HAP emissions from other sources.

2. "Necessary" prong of section 112(n)(1)(A) analysis.

As noted above, section 112(n)(1)(A) requires EPA to consider only "the hazards to public health anticipated to occur as a result of emissions by electric utility steam generating units … after imposition of the requirements of this Act." This statutory

[104] CAA § 112(n)(1)(A); 42 U.S.C. § 7412(n)(1)(A) (emphasis added).
[105] *See* 76 Fed. Reg. at 24,988.
[106] *See id.* at 24,989 (stating "Finally, consistent with sections 112(n)(1)(A) and 112(n)(1)(B), we conclude that we may base the appropriate finding on the availability of controls *to address HAP emissions from EGUs*." (emphasis added)).

provision therefore requires emission reductions that occur as a result of CAA programs to be factored into the "appropriate and necessary" determination.

Based on the language of the statute, it would be appropriate for EPA to consider the emission reductions achieved through the full range of currently applicable and future CAA programs in the "necessary" portion of the analysis, as described in the preamble. Notably, this approach is consistent with EPA's original 2000 analysis and finding. For example, if EPA takes into account the emission reductions that will be achieved through the Transport Rule and the revised NAAQS for PM and ozone—to name only a few—a different conclusion might be reached due to the co-benefit HAP reductions achieved by the implementation of emissions controls for these various programs.

Furthermore, when making a determination for the "necessary" prong of the section 112(n)(1)(A) analysis, EPA should focus on the national impacts of regulating HAP emissions from the EGU source category. Section 112 authorizes EPA to establish national emission standards that address emissions of HAP from sources in the U.S. This provision of the CAA is not geared towards limiting HAP emissions that would have impacts beyond U.S. borders. When Congress intended EPA to address international air pollution issues, it clearly specified a process and procedure for doing so.[107]

To help strengthen its determination legally on the "necessary" prong of the analysis, EPA should consider hazards to public health posed by HAP emissions from EGUs after all relevant and applicable CAA programs are put in place, including more recent regulations. Furthermore, as provided by the statute, the scope of the analysis should focus exclusively on domestic impacts of HAP emissions from EGUs in the U.S.

[107] *See* CAA § 115 (International air pollution); 42 U.S.C. § 7415.

C. *If EPA determines control of other HAP is necessary, EPA has discretion to set health-based emission standards under section 112(d)(4).*

In the event that EPA ultimately concludes that regulation of HAPs, other than Hg, is "necessary and appropriate" under section 112, EPA retains some discretion as to how those pollutants are regulated. In particular, while CAA section 112(d) requires EPA to set MACT standards at least as stringent as the MACT floor for all HAPs emitted from the particular source category, section 112(d)(4) establishes an exception to this general requirement by stating: "With respect to pollutants for which a health threshold has been established, the [EPA] Administrator may consider such threshold level, with an ample margin of safety, when establishing emission standards under this subsection."[108]

In effect, this provision gives EPA discretionary authority to establish health-based standards if two conditions are satisfied. First, health-based standards can be established only for only those HAPs for which a "health threshold" has been established. Although not defined in the CAA, EPA interprets a health threshold to refer to "the level of concentration of a chemical under which no health effects are expected from exposure" over a lifetime.[109] Second, the health-based standards must be set at levels that are not expected to cause adverse health effects, with a margin of safety.[110]

For those HAPs that can satisfy these two requirements, EPA has discretionary authority not to establish technology-based MACT standards under the general MACT standard-setting process under section 112(d). In addition, if EPA uses its section 112(d)(4) authority to established health-based standards, it may do so only for individual HAPs with an established threshold and must establish traditional technology-based MACT standards for the other HAPs emitted from the source category. Section 112(d) thus does not require EPA to use only one method to regulate all HAPs from a particular source category.

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[108] CAA Section 112(d)(4); 42 U.S.C. § 7412(d)(4).
[109] Chlorine and Hydrochloric Acid Emissions From Chlorine Production, 68 Fed. Reg. 70,948, 70,951 (Dec, 19, 2003); Mercury Emissions From Mercury Cell Chlor- Alkali Plants, 68 Fed. Reg. 70,904, 70,915 (Dec. 19, 2003).
[110] The legislative history of section 112(d)(4) indicates that Congress intended for EPA to have discretionary authority to set the health-based emissions standard at the level at which no observable effects occur, with an ample margin of safety. S. Rep. 101-228 at 171-72.

In the preamble to the proposed rule, EPA provides a discussion of how health-based standards would be established. EPA defines reference concentration (RfC) to mean, "'an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.'"[111] EPA's analyses indicate that acid gases from coal-fired power plants do not result in exceedances of any RfC.[112] The study on which EPA relied to determine whether to use health-based standards focused on 16 coal-fired facilities as worst case test cases in order to determine whether health-based standards were appropriate.[113] This study did not find potential for coal-fired utilities to exceed any RfC and would provide justification for EPA to set health-based standards. Furthermore, other considerations of cumulative effects, impacts on the environment, and the co-benefits of a MACT standard should not be deciding factors of whether or not to establish health-based emission limits under section 112(d)(4) because standards under section 112 should be focused on HAP emissions from the regulated source category that impact health.[114]

LPPC encourages EPA to reconsider its decision and set health-based standards for HCl and other threshold pollutants as provided for in section 112(d)(4) for those HAPs for which the agency can determine a level that avoids adverse health effects with an ample margin of safety.

[111] Memorandum from Madeleine Strum, "Non-Hg Case Study Chronic Inhalation Risk Assessment for the Utility MACT Appropriate and Necessary Analysis," EPA-HQ-OAR-2009-0234-2939 at 13 (March 16, 2011) [hereinafter *Strum Memo*].
[112] 76 Fed. Reg. at 25,051 ("Our case study analyses of the chronic impacts of EGUs did not indicate any significant potential for them to cause any exceedances of the chronic RfC for HCl due to their emissions alone.").
[113] *Strum Memo* at 2.
[114] *Id.*

V. Issues Related to Proposed New Source Performance Standards (NSPS).

A. *Proposed NSPS limits are based on a "fuel neutral" approach.*

EPA asserts in the preamble that its NSPS limits are "fuel neutral" while they are, in fact, actually based on coal-fired units. LPPC encourages EPA to develop similar standards as those in the proposed rule but use as the foundation of such standards an approach for standard-setting that is technology-based and accounts for fuel type. Such an approach would be more environmentally protective and consistent with EPA's previous NSPS development. In the alternative, if EPA retains the proposed methodology for setting NSPS, then LPPC recommends that EPA ensure that future NSPS can be met by the full range of fuel types.

Section 111 requires EPA to set technology-based performance standards that reflect the "best system of emissions reduction" and not a performance standard designed to encourage the use of clean fuels.[115] Although the statute also grants the EPA Administrator authority to consider other factors beyond the best system of emissions reduction, the proposed rule offers no analysis to support the "fuel neutral" approach, and simply states a desire to provide a "clear incentive to use cleaner fuels." Presumably the clear incentive is a less costly regulatory requirement than otherwise resulting from use of the best system of emissions reduction. Thus, EPA's decision to base the Subpart Da NSPS on "a fuel and technology neutral approach"[116] is contrary to section 111 of the CAA.

Moreover, the proposed NSPS limits are not "fuel neutral" in that they are based on coal-fired units. For example, the U.S. Energy Information Administration (EIA) reports that in 2008, 53% of the nation's electric generating capacity was provided by steam generation systems (including those fueled by fossil fuels, nuclear, and other fuels).[117] Of the steam generating capacity, 57% was provided by coal, 5% by residual fuel oil, and 0.2% by the more costly distillate fuel oil. However, no new oil-fired steam

[115] CAA § 111; 42 U.S.C. § 7411 (2006).
[116] 76 Fed. Reg. at 25,062.
[117] *Form EIA-860 Annual Electric Generator Report*, U.S. Energy Information Administration, 2008 database downloaded from http://www.eia.gov/cneaf/electricity/page/eia860.html .

generating capacity large enough to be subject to Subpart Da has come on line in the U.S. since 1987. Indeed, EIA reports no new natural gas-fired steam generating unit of a size qualifying for Subpart Da has come on line since 1993.[118] Based on both EPA's own market analysis and on data reported by the U.S. EIA, there appears to be no market for either natural gas or oil-fired EGUs meeting the applicability criteria set by Subpart Da. Therefore, the so-called "fuel neutral" standards in the proposed rule could not possibly have been based on any other fuel but coal.

LPPC supports EPA's proposed limits but maintains that the standards should not be labeled "fuel neutral" and should be modified to specifically account for technology and fuel type. In the alternative, if EPA decides to depart from the well-established practice of accounting for fuels, EPA should retain this approach for future NSPS and ensure that such standards can be met by a range of fuels.

B. *Proposed NSPS limits would apply at all times.*

Similar to the Proposed Utility MACT, EPA is proposing that the revised NSPS emission limits would apply at all times, including during SSM periods. Malfunction would be an affirmative defense against compliance violation if certain criteria are met, however the presumption would be that any time the NSPS emission limits are exceeded during SSM, a violation has taken place.

EPA states in the preamble to the proposed rule that it chose a standard that will apply at all times because the agency did not attempt to filter out periods of SSM from the data used to set the standards, and therefore the proposed standards account for such periods.[119] However, EPA cannot show that the data adequately accounted for periods of SSM, only that the agency did not attempt to screen out such periods. The act of failing to screen out such periods from the NSPS data is simply not sufficient to demonstrate that such periods are included in the standard-setting, and thus it is not an adequate basis under which to require the same standards be met during periods of SSM.

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[118] *Existing Electric Generating Units by Energy Source, 2008*, U.S. Energy Information Administration, database downloaded from http://www.eia.gov/cneaf/electricity/page/capacity/capacity.html .
[119] 76 Fed. Reg. at 25,063.

EPA also has stated that it does not view malfunction as a distinct operating mode, and thus it would be impracticable to take malfunction into account when setting the standards.[120] However, EPA cannot reasonably expect sources to comply with the NSPS standards during periods of malfunction when it has not taken such potential malfunction into account in setting such standards. As a general rule, sources do not measure emissions during malfunctions and are not able to meet standards during such times.

Consequently, EPA should propose a work practices standard during SSM periods, because the use of the proposed NSPS emissions standard is not practicable during SSM. This approach has been utilized in other EPA air rules.[121] While facilities are required to keep records of the occurrence and duration of any SSM events under 40 C.F.R. § 60.7(b) and report either that excess emissions occurred (40 C.F.R. § 60.7(c)(2)) or that no excess emissions occurred (40 C.F.R. § 60.7(c)(4)), sources are not currently required under NSPS to report the amount of any overage that occurs during an SSM period to EPA.

Work practices should govern the emissions requirements for NSPS during startup and shutdown. For malfunctions, a source should have to address the malfunction as soon as safely practicable. LPPC supports EPA's use of an affirmative defense regarding malfunction to increase flexibility, but the best approach to the standard is simply to require facilities to follow good operating practices during these periods.

Facilities have no incentive to ignore or otherwise refuse to address a malfunction in their equipment because they have emissions limitations from a variety of EPA programs that require the correct monitoring of emissions. Thus, it is not necessary, and indeed is counterproductive, to require that sources comply with strict NSPS limits when experiencing a malfunction. To the contrary, the best approach is to require such sources

[120] *Id.* at 25,064.
[121] *See*, *e.g.*, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 9648, 9653 (2010) and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 51570, 51574 (2010).

to follow a work practices standard that ensures problems are addressed as soon as safely practicable.

In the preamble to the proposed rule, EPA notes that the D.C. Circuit case *Sierra Club v. EPA*,[122] has limited the use of work practices during SSM in the MACT context. However, this case only imposed certain limitations on the use of SSM, and the decision did not in any way limit the use of work practices under NSPS. A work practices standard is the correct approach to addressing SSM for NSPS. It is simply not appropriate or practicable to include SSM periods as part of the general NSPS standard.

C. *Units with commercial demonstration permits are properly exempt from the proposed NSPS amendments.*

The proposed amendments to the NSPS would not apply to units receiving a commercial demonstration permit. Instead, EPA proposed that these units would have to comply with standards similar to those finalized in 2006.[123] LPPC supports EPA's exemption for units with commercial demonstration permits from the proposed NSPS amendments. In the proposed rule, owners/operators of innovative emerging technologies that apply for and are granted a commercial demonstration permit by the Administrator for an affected facility that uses a pressurized fluidized bed, a multi-pollutant emissions control system, or advanced combustion would be granted an exemption from the NSPS standards.[124]

[122] 551 F.3d 1019 (D.C. Cir. 2008), cert. denied, 130 S.Ct. 1735 (U.S. 2010).
[123] 76 Fed. Reg. at 25,062.
[124] *Id.* at 25,061.

EPA properly recognized the NSPS amendments' potential to discourage new and promising technologies in the original NSPS in 1979.[125] As a result, EPA developed the commercial demonstration permit as a means to mitigate the impact of these regulations on emerging technologies.[126] EPA's authority to do so stemmed from a D.C. Circuit case which stated that NSPS should avoid unreasonable costs or other impacts.[127] According to the regulations, the Administrator will issue a commercial demonstration permit in her discretion as long as the electrical generation capacity does not exceed certain limits.[128]

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Respectfully submitted,

Brian H. Moeck
General Manager,
Platte River Power Authority
and
CEO Sponsor, LPPC Environmental
Task Force

[125] *Id.* at 25,068 (citing 44 Fed. Reg. 33,580).
[126] *Id.*; *see also* 40 C.F.R. § 60.47Da.
[127] 76 Fed. Reg. at 25,068 (citing *Essex Chemical Corp. v. Ruckelshaus*, 486 F.2d 42 (D.C. Cir. 1973)).
[128] 40 C.F.R. § 60.47Da(e).