Comments of

New Jersey Attorney General Peter C. Harvey

California Attorney General Bill Lockyer

Connecticut Attorney General Richard Blumenthal

Maine Attorney General G. Steven Rowe

Massachusetts Attorney General Thomas F. Reilly

New Hampshire Acting Attorney General Kelly A. Ayotte

New Mexico Environment Secretary Ron Curry

New York Attorney General Eliot Spitzer

Pennsylvania Department of Environmental Protection Chief Counsel

Michael D. Bedrin

Vermont Attorney General William H. Sorrell

Wisconsin Attorney General Peggy A. Lautenschlager

On

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; Proposed Rule

And

Supplemental Notice for the 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: Proposed Rule

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I. INTRODUCTION

The 1990 amendments to the Clean Air Act (the "Act" or "CAA") required EPA to study the health hazards posed by toxic substances being emitted from electric utility steam generating units ("EGUs" or "power plants"). The amendments also required EPA to determine – based on that study – whether it was "appropriate and necessary" to regulate such emissions as "hazardous air pollutants" (HAPs) under section 112 of the Act. EPA conducted the mandated study through which the agency documented the severe health impacts posed by mercury and other toxic emissions from power plants. Based on these findings, EPA formally determined in December of 2000 that it was "appropriate and necessary" to regulate coal- and oil-fired power plants under section 112. Having made that finding, EPA is required to set appropriate plant-specific emission standards based on the "maximum achievable control technology" ("MACT") for mercury and other HAPs emitted from power plants.

In its Notice of Proposed Rulemaking (NPR) published on January 30, 2004 (69 Fed. Reg. 4652 (January 30, 2004)) and the Supplemental Notice (SNPR) published on March16, 2004 (69 Fed. Reg. 12398 (March 16, 2004)), EPA proposes two distinct options for the regulation of power plant mercury emissions. One is to set a plant-specific MACT standard. As is discussed below, the particular standard the agency proposed is much too weak and is at odds with the criteria that the Act requires EPA to use. Section 112 requires EPA to adopt an appropriate plant-by-plant MACT standard, which will lead to significant and expeditious reductions of mercury. See 42 U.S.C.A. §7412(i)(3). In short, EPA must require emitters to install state-of-the-art control equipment that

will achieve real and substantial emissions reductions.* In the current rulemaking, however, EPA appears driven by a different yardstick: it proposes to set standards that most power plants can achieve without having to install additional controls. Thus, through its subcategorization by ranks of coal, through the manner in which it has factored in variability, through its method of compliance determination, and through other means, EPA has structured its proposed MACT standard so as to build in buffer-upon-buffer to avoid substantial emission reductions. With all of these buffers in place, the end result is a MACT standard for bituminous coal that is 17 times the actual emissions level that is already achieved by the top 12 percent performers using current technology. This result is totally at odds with the requirements of the Act. The MACT standard EPA is proposing would result in total mercury reductions from EGUs of less than 30 percent, which is nothing more than would be achieved as a co-benefit from regulations that target other pollutants.

As an alternative, EPA has proposed an emissions trading scheme as its preferred approach. Specifically, EPA's proposed mercury trading program is expected to result in mercury emission reductions of approximately 70 percent by 2018, although recent EPA models indicate that these reductions will not be achieved until 2025 to 2030, if then. Having proposed such a weak plant-specific MACT standard, EPA argues that its preferred emissions trading scheme looks good by comparison. The agency asserts that emissions trading is authorized under section 111(d) or section 112(n). However, as is discussed below, the Act provides no such authority for trading under either

* EPA is required to adopt a MACT standard for existing sources that represents "the average emission limitation achieved by the best performing 12 percent of the existing sources," and for new sources, the MACT standard must be the "emission control that is achieved in practice by the best controlled similar source." See 42 U.S.C.A. 7412(d)(3). Here, as elsewhere in these comments, we refer to "the best performing 12 percent of the existing sources," but recognize that this not the complete description of the legal requirement.

section cited. EPA has a clear statutory obligation to set a plant-specific MACT standard for mercury unless and until it formally "delists" power plants from regulation under section 112 in accordance with the process and criteria established by section 112(c)(9)(B)(ii). Because there is no reason to support delisting power plants as a source category, the agency has no means of annulling its earlier "appropriate and necessary" finding.

In addition to the unauthorized trading program, EPA has proposed to establish a "safety valve" provision through which industry can obtain relief if the price of purchasing emission credits exceeds a set threshold. Leaving aside the fact that the agency has provided no explanation of how it set the proposed threshold, creating such a loophole would undercut the very market forces that EPA is trying to create. In addition, there is also no authority for such a provision in the Act. To the contrary, the Act requires EPA to "protect public health with an ample margin of safety," not to enact regulations that only serve to protect the economic interests of the power industry.

Power plants are the largest remaining source of mercury, which is one of the most toxic substances that we face. EPA does not question that mercury is a dangerous, persistent, bioaccumulative neurotoxin that has been proven to cause a variety of developmental neurological abnormalities in babies and young children, including delayed developmental milestones, cerebral palsy, reduced neurological test scores and delays and deficits in learning abilities. To the contrary, EPA is issuing fish consumption advisories warning the public of the grave dangers posed by mercury at the same time it is proposing extremely weak and unprotective regulations that contravene the CAA. EPA must live up to its statutory obligation under the CAA to protect the public health.

For the reasons set forth in the comments below, EPA must abandon its proposed cap and trade approach, as well as its watered-down MACT standard. EPA must abide by its December 2000 regulatory finding that it is "appropriate and necessary" to regulate power plants under section 112 of the CAA, and it must adopt appropriate plant-specific MACT standards for mercury, nickel and all other HAPs that are emitted by EGUs in significant amounts. Our detailed comments follow.

II. EPA HAS DOWNPLAYED AND MISCHARACTERIZED THE CURRENT SCIENCE AND TECHNOLOGY CONCERNING THE PUBLIC HEALTH IMPACTS CAUSED BY MERCURY EXPOSURE, WHICH SUPPORTS THE NEED FOR AN APPROPRIATE MACT STANDARD UNDER SECTION 112.

In its proposed mercury rule, EPA disregarded the available science when evaluating the adverse health impacts of mercury exposure, ignored the degree to which the public is exposed to mercury, did not assess the benefits to the public health of decreased methylmercury ingestion in fish, and presented, without foundation, the global and local impacts of mercury deposition. There is overwhelming evidence, including recent new data, that mercury emissions from U.S. power plants are severely impacting inland U.S. waters and coastal waters, leading to massive environmental damage and the need for fish consumption advisories. Mercury emissions from U.S. power plants are also contributing to adverse effects on human health. The relationship between mercury emissions from coal-fired plants and the elevated levels of mercury in fish is not in dispute. There is sound scientific basis for requiring stringent controls for mercury emissions based on EPA's own statements. Further, uncertainties that may exist point to the need for, not the weakening of, safeguards to reduce the public's exposure to mercury.

Methylmercury, the organic form mercury assumes in fish, is a potent neurotoxin that poses the greatest risk to the developing fetus, infants, and young children. EPA's own regulatory finding, as published in the *Federal Register* in December 2000, concluded that "mercury is both a public

health concern and a concern in the environment" and that "there is a plausible link between methylmercury concentrations in fish and mercury emissions from coal-fired electric utility steam generating units." 65 Fed. Reg. at 79830 (1st column). In this regulatory finding, EPA relied in part on an independent evaluation of the health impacts of methylmercury, completed in July 2000 by the NAS, and on EPA's December 1997 "Mercury Study Report to Congress." Specifically, EPA found:

> Most of the mercury currently entering U.S. water bodies and contaminating fish is the result of air emissions which, following atmospheric transport, deposit onto watersheds or directly to water bodies. EPA concluded that, given the total mass of mercury estimated to be emitted from all anthropogenic sources and EPA's modeling of the atmospheric transport of emitted mercury, coal combustion and waste incineration most likely bear the greatest responsibility for direct anthropogenic mercury deposition to the continental U.S. There is a plausible link between emissions of mercury from anthropogenic sources (including coal-fired electric utility steam generating units) and methylmercury in fish. Id. at 79827 (2nd column).

EPA further found that "the available information indicates that mercury emissions from electric utility steam generating units comprise a substantial portion of the environmental loadings and are a threat to public health and the environment." Id. at 79827 (3rd column). EPA estimated (based on its February 1998 "Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units – Final Report to Congress") that coal-fired plants emitted approximately 46 tons of mercury in 1990 and 51 tons in 1994. Id. at 79828 (1st column). Mercury emissions were estimated to be 43 tons in 1999 (from 1,149 units at 464 coal-fired plants), and were projected to be approximately 60 tons in 2010, if not controlled (from 1,026 units at 426 coal-fired plants). Id. at 79827-79828 (3rd to 1st columns).

A "Reference Dose" (RfD) for methylmercury of 0.1 microgram per kilogram per day (ug/kg/day) was derived by EPA based on the occurrence of developmental, neurological effects observed in children born to mothers exposed to methylmercury during their pregnancy. The RfD is an estimate of a daily exposure to the human population that is likely to be without an appreciable risk of deleterious effects during a lifetime. The EPA utilized an uncertainty factor of 10 in its calculation of the RfD for methylmercury.* The EPA estimated that about 7 percent of women of childbearing age (i.e., between the ages of 15 and 44 years) are exposed to methylmercury at levels exceeding its RfD of 0.1 ug/kg/day. Data from the CDC indicate that one in 12 women of childbearing age have unsafe mercury levels.** About 1 percent of women have methylmercury exposures 3 to 4 times the methylmercury RfD. Id. at 79827 (1st and 2nd columns).

An analysis of blood organic mercury data from the National Health and Nutrition Examination Survey (NHANES) 1999 and 2000 found that 7.8% of adult women had blood mercury levels exceeding the mercury RfD of 0.1 ug/kg/day (which in blood is equal to 5.8 ug/L). Applying the overall population estimate for adult women having blood mercury at or above 5.8 ug/L, the number of newborns in 2000 that are at increased risk of adverse effects from mercury were estimated to be greater than 300,000 newborns per year.***

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* USEPA. 2001. IRIS Database. Integrated Risk Information System. Methylmercury: Reference Dose for Chronic Oral Exposure (RfD). Online status April 26, 2004 (last revised 7/27/01).

** Ventura, S.J.; Hamilton, B.E.; Sutton P.D. Revised Birth and Fertility Rates for the United States, 2000 and 2001. National Vital Statistics Reports 51(4). Available: http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_04.pdf [accessed 4 November 2003].

*** Mahaffey, K., Clickner, B., Bodurow, C., 2004. Blood Organic Mercury and Dietary Mercury Intake: National Health and Nutrition Examination Survey, 1999 and 2000. Environmental Health Perspectives, Volume 112, Number 5, pages 562-570.

EPA's RfD of 0.1 ug/kg/day was calculated using an assumption that the level of mercury in cord blood is equal to that in maternal blood (a one-to-one ratio, 1:1). More recent scientific research, however, indicates that the ratio is not equal, but that the fetal blood mercury level is higher than the maternal blood mercury level by a ratio of 1.7:1.[*] This difference has a dramatic impact on the estimate of the number of newborns who may be at increased risk of adverse effects due to mercury exposure, which rises to more than 600,000 newborns per year when the new ratio is taken into consideration.[**].

The known neurotoxic effects of mercury exposure require prompt regulatory action to control mercury risks, such as the adoption by the EPA of appropriate MACT standards under section 112 of the CAA for mercury emissions from existing coal-fired power plants. The sensitivity of the young to the effects of mercury exposure, the largely uncharacterized nature of cardiac and hematological effects, potential effects on the elderly, lack of information on mercury pharmacodynamics and pharmacokinetics, other database uncertainties, and recent new information all suggest that strict mercury controls are needed to ensure adequate public health protection.[***]

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[*] Stern, A., 2004, Update on the Current Mercury RfD and the Implications for Revisions Based on Recent Data. Presented at the USEPA National Forum on Contaminants in Fish, January 26, 2004, and, Stern, A., and Smith, A., 2003, An assessment of the cord blood-maternal blood methylmercury ratio: implications for risk assessment. Environmental Health Perspectives, Volume 111: 1465-1470.

[**] Mahaffey, K., 2004. Methylmercury: Epidemiology Update. Presented at the USEPA National Forum on Contaminants in Fish Contamination. January 26, 2004.

[***] Rice, D., Schoeny, R., Mahaffey, K. 2003. Methods and Rationale for Derivation of a Reference Dose for Methylmercury by the USEPA. Risk Analysis 20(1): 107-115.; Murata, K., Weihe, P., Budtz-Jorgensen, E., Jorgensen, P, Grandjean, P. 2004. Delayed brainstem auditory evoked potential latencies in 14-year-old children exposed to methylmercury. J. Pediatrics 144: 177-183; Shanker, G., Syversen, T., Aschner, M. 2003. Astrocyte-mediated methylmercury neurotoxicity. Biological Trace Element Research 95: 1-10; Steuerwald, U., Weihe, P, Jorgensen,

In its January 2004 preamble to the proposed mercury rule, EPA downplays the health effects of mercury that it had identified in the December 2000 regulatory finding, and likewise exaggerates uncertainties in the science that may exist. For example, the claims made in the preamble stated that "The EPA cannot currently quantify whether, and the extent to which, the adverse health effects occur in the populations surrounding these [coal- and oil-fired] facilities, and the contribution, if any, of the facilities to those problems." 69 Fed. Reg. at 4657 (3rd column). Quantification of health effects from a facility's toxic air emissions is routinely done, and is often *required* to be done, using recognized methods of air dispersion and deposition modeling to generate chemical exposure rates in the population surrounding the facility. These exposure rates are then compared to hazard indexes or cancer risks in order to assess the adverse health effects. This is generally called a "multipathway risk assessment" process, and is well known to EPA. While such a risk assessment process cannot predict individual cases based on cause and effect, it is an accepted method of risk assessment to use chemical exposure information to assess the occurrence of potential adverse health effects.

It is likewise misleading for EPA to claim that "it is difficult to quantify how the water deposition of Hg leads to an increase in fish tissue levels" Id. at 4658 (2nd column). Ecological risk assessments and other types of modeling, combined with a large body of research on atmospheric transport and deposition, water-column studies in lakes and oceans, and studies of mercury uptake

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P., et al. 2000. Maternal seafood diet, methylmercury exposure, and neonatal neurologic function. J. Pediatrics 136: 599-605; Mahaffey, K., Clickner, R., Bodurow, C. 2004. Blood Organic Mercury and Dietary Mercury Intake: National Health and Nutrition Survey, 1999 and 2000. Env. Health Perspectives. 112(5): 562-570; Stern, A., Smith, A. 2003. An assessment of the cord blood-maternal blood methylmercury ratio: implications for risk assessment. Env. Health Perspectives. 111: 1465-1470; Grigg. J. 2003. Environmental toxins; their impact on children's health. Arch Diseased Child 89: 244-250.

and distribution in the marine food web have all provided overwhelming evidence of damage done by anthropogenic mercury emissions. Individual atoms of mercury cannot be traced from stack to fish, but the overall flux of mercury from human activities to the marine environment is clear.

EPA has also distorted the science, and has made misleading conclusions in its assessment of mercury. A recent *New York Times* article presented a wide variety of similar evidence and cited concerns that "a host of subtle changes by White House staff members resulted in proposed rules that played down the health risks associated with mercury from coal-fired power plants. The proposal largely tracks suggestions from the energy industry." Jennifer Lee, "White House Minimized the Risks of Mercury in Proposed Rules, Scientists Say," *New York Times*, April 7, 2004, page A14.

In the preamble to the mercury proposal, EPA failed to evaluate, conduct or present an assessment of the benefits to the public of reduced mercury levels in fish. It only weighed the cost of the regulation to the industry, and ignored the benefits of reduced mercury exposure to the public that the regulation would provide.

At a time when lax regulatory controls are being proposed for mercury emissions from power plants, EPA and the Food and Drug Administration (FDA) announced new warnings about eating mercury contaminated fish, especially for children and women of child-bearing age. Specifically, on March 29, 2004, the FDA and EPA announced their joint consumer advisory on methylmercury in fish and shellfish for reducing the exposure to high levels of mercury in women who may become

pregnant, pregnant women, nursing mothers, and young children. This new joint consumer advisory unifies advice from both FDA and EPA and supersedes FDA's and EPA's 2001 advisories.*

While EPA's proposed mercury emission rule acknowledges the existence of fish consumption advisories, it indicates they are applicable to "women of child-bearing age" but fails to mention their applicability to children. 69 Fed. Reg. at 4658 (1st column). The proposed rule also claims that "The typical U.S. consumer eating a wide variety of fish from restaurants and grocery stores is not in danger of consuming harmful levels of methylmercury from fish and is not advised to limit fish consumption." Ibid. In making this claim, EPA apparently assumes that the only typical U.S. consumers of fish are adult males.

In the March 2004 FDA/EPA advisory, the government is recommending that women who might become pregnant, who are pregnant, nursing mothers and young children should not eat any Shark, Swordfish, King Mackerel or Tilefish, and should limit intake of shrimp, canned tuna, pollack, catfish and Albacore ("white") tuna. Yet, at the same time, the EPA is proposing to allow continued mercury emissions at an unnecessarily and indefensibly high rate for over 20 years. For the protection of public health in the United States and elsewhere, the federal agencies need to utilize the best available science to propose a rule that will safeguard and protect human health and the environment from mercury levels in our waters, fish, and bodies.

In addition to the joint EPA/FDA joint advisory, the number of states that have issued mercury fish advisories has risen from 27 in 1993 to 45 in 2002, largely due to the issuance of 309 new mercury advisories by 23 states. In 2002, the geographic extent of the contamination exceeds

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* EPA and U.S. Department of Health and Human Services, "What You Need to Know About Mercury in Fish and Shellfish," EPA-823-R-04-005, March 2004, available at http://www.cfsan.fda.gov/~dms/admehg3.html.

12 million acres and 470,000 river miles. In addition, 19 states (Connecticut, Florida, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, North Dakota, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin) have statewide advisories for mercury in freshwater lakes and/or rivers. Eleven states (Alabama, Florida, Georgia, Louisiana, Maine, Massachusetts, Mississippi, North Carolina, Rhode Island, South Carolina, and Texas) have statewide advisories for mercury in coastal waters of their states. Two tribal statewide advisories have been issued for mercury in freshwater and marine fish (including lobster) by the Micmac tribe of Maine.[*]

In light of EPA's own findings that power plants are the largest emitters of mercury, the overwhelming scientific evidence that 8% of women of childbearing age have elevated mercury levels, that over 600,000 babies are born overexposed to mercury *in utero* with potential neurological deficits, and the fact that fish consumption advisories nationwide are on the rise, EPA's regulatory response should be to establish an appropriate plant-by-plant MACT standard under section 112 of the CAA in order to achieve meaningful reductions of mercury emitted into the atmosphere.

III. SECTION 112 OF THE CAA REQUIRES EPA TO ADOPT A STRINGENT MACT STANDARD FOR THE CONTROL OF MERCURY EMITTED FROM POWER PLANTS.

In passing the 1990 CAA amendments, Congress laid out a specific provision for the regulation of HAP emissions from EGUs. Specifically, section 112(n)(1)(A) provides, in its entirety:

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[*] EPA Fact Sheet, May 2003, Update: National Listing of Fish and Wildlife Advisories, Office of Water, EPA-823-F-03-003 .

> The Administrator shall perform a study 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) of this section after imposition of the requirements of this chapter. The Administrator shall report the results of the study to the Congress within 3 years after November 15, 1990. The Administrator shall develop and describe in the Administrator's report to Congress alternative control strategies for emissions which may warrant regulation under this section. The Administrator shall regulate electric utility steam generating units under this section, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study required by this subparagraph. [Emphasis added.]

The process outlined in section 112(n)(1)(A) did not supplant sections 112(c) and (d) as the statutory mechanism for the regulation of EGUs, but rather required EPA to make a threshold determination that it is "appropriate and necessary" to regulate EGUs before proceeding with any regulation of this source category. If, after following this preliminary process, EPA made the requisite "appropriate and necessary" finding, then the Administrator is required to regulate EGUs in accordance with section 112, which requires the imposition of a MACT standard.

EPA tries to avoid this conclusion by arguing that the initial determination to list EGUs under section 112(c) in December 2000 "was without proper foundation." 69 Fed. Reg. at 4689 (2nd column). Based on that argument, EPA claims that it does not have to follow the prescribed statutory criteria for delisting a source category established by Congress in section 112(c)(9)(B)(ii). However, because EGUs were properly listed as a source category, EPA is required to delist them in accordance with the CAA, and may not rely on inapplicable and distinguishable examples of past delistings to support bypassing its clear statutory mandate. These arguments are explored in greater detail below.

A. EPA's initial listing of EGUs as a source category was the result of extensive scientific study required by section 112(n).

As required by section 112(n)(1)(A), EPA undertook the study of the hazards to public health reasonably expected to be caused by power plant emissions. In February 1998, EPA released its utility report to Congress ("RTC") and the public. 65 Fed. Reg. 79825, 79826 (December 20, 2000) (2nd column). In the RTC, EPA concluded that "mercury from coal-fired utilities is the HAP of greatest potential concern and merits additional research and monitoring." RTC, Executive Summary, ES-26. EPA estimated in the RTC that approximately sixty percent of the total mercury deposited in the United States comes from "U.S. anthropogenic air emission sources; the percentage is estimated to be even higher in certain regions (e.g., northeast U.S.)." 65 Fed. Reg. at 79827 (2nd column). For other HAPs (namely dioxin, arsenic and nickel), EPA acknowledged that there were remaining concerns that "may warrant further study." RTC, Executive Summary, ES-26.

Since EPA identified uncertainties in the final utility RTC that warranted additional research and monitoring, EPA continued with its ongoing investigations and analyses. 65 Fed. Reg. 10783, 10784 (February 20, 2000). EPA issued an information collection request ("ICR") to all coal-fired EGUs under section 114 of the CAA requesting information on the mercury content of the coals burned in, and the exhaust gases from, the EGUs for calendar year 1999. Ibid. In addition, EPA, in conjunction with DOE, sought information to assess the effectiveness and cost of various mercury pollution control technologies and pollution prevention options. Ibid. Finally, at the direction of Congress, EPA requested and funded the National Academy of Sciences ("NAS") to perform an 18-month independent study of available data on the health impacts associated with exposure to

mercury.* Ibid. Additional public comment was solicited by EPA on February 29, 2000, and another public meeting was held on June 13, 2000. Ibid.; 65 Fed. Reg. 18992 (April 10, 2000).

On December 20, 2000, after years of peer-reviewed scientific and technical study, multiple public meetings and extensive public comment, EPA published its regulatory finding on the emissions of HAPs from EGUs. 65 Fed. Reg. 79825 (December 20, 2000). In this finding, EPA concluded that the "regulation of HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of the CAA is appropriate and necessary."** 65 Fed. Reg. at 79826; 69 Fed. Reg. at 4689. This finding was based, in part, on EPA's own conclusion that:

> Electric utility steam generating units (which are not currently regulated for mercury emissions) are the largest source of mercury emissions in the U.S., estimated to emit about 30 percent of current U.S. anthropogenic emissions. There is a plausible link between emissions of mercury from anthropogenic sources (including coal-fired electric steam generating units) and methylmercury in fish. Therefore, mercury emissions from electric steam generating units are considered a threat to public health and the environment. [65 Fed. Reg. at 79827.]

EPA's regulatory finding was also based on its own analysis, as reported in the Federal Register, in which EPA concluded that "[m]ercury is highly toxic, persistent, and bioaccumulates in food chains[,]" that "[n]eurotoxicity is the health effect of greatest concern with methylmercury exposure," that "[m]ost of the U.S. population consumes fish and is exposed to methylmercury as

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* The NAS study, which was released in July 2000, "Toxicological Effects of Methylmercury," affirmed EPA's assessment that about seven percent of women of childbearing age are exposed to methylmercury at levels exceeding its reference dose(RfD) of 0.1 microgram per kilogram body weight per day. 65 Fed. Reg. at 79827 (1st and 2nd columns). As described above, more recent studies have estimated that 8 percent of women of childbearing age have mercury levels that are considered to be of concern.

** EPA also concluded that the regulation of HAP emissions from natural gas-fired EGUs is not "appropriate and necessary." 65 Fed. Reg. 79825, 79826 (December 20, 2000).

a result," and that "[m]ost of the mercury currently entering U.S. water bodies and contaminating fish is the result of air emissions which, following atmospheric transport, deposit onto watersheds or directly to water bodies." 65 Fed. Reg. at 79829 - 79830. Thus, EPA unequivocably concluded that: "mercury emissions from electric steam generating units comprise a substantial portion of the environmental loadings and are a threat to public health and the environment." (Emphasis added.) 65 Fed. Reg. at 79827 (3rd column). This finding led EPA to list EGUs as a source category. 65 Fed. Reg. at 79826 (1st column); see also 67 Fed. Reg. 6521, 6522 (February 12, 2002); See also 42 U.S.C.A. §7412(c)(1).

Based on EPA's threshold finding on the public health hazards expected to occur as a result of power plant HAP emissions, especially mercury, EPA is now statutorily required to regulate EGUs "under this section," which clearly refers to section 112.

B. Section 112 establishes the framework for the regulation of HAPs.

The 1990 CAA amendments completely restructured the regulation of HAPs under section 112. The amendments were enacted to address EPA's slow progress in regulating HAPs. See Sierra Club v. EPA, 353 F.3d 976, 979 (D.C. Cir. 2004) (stating that between 1970 and 1990, EPA listed only eight HAPs and established emission standards for only seven of them.) Under these amendments, Congress required EPA to set the "most stringent standards achievable," which are standards "based on the maximum reduction in emissions which can be achieved by application of [the] best available control technology." Cement Kiln Recycling Coalition v. EPA, 255 F.3d 855, 857 (D.C. Cir. 2001). The new amendments established a list of 188 HAPs, set a mandatory schedule for issuing emissions standards for the major sources of these pollutants, and established a "non-discretionary duty" on the Administrator of EPA to promulgate technology-based emission

standards for all categories and subcategories of major emitting sources of listed HAPs. See Sen. Rep. 101-228, U.S. Code Cong. & Admin. News at 3385, 3518, 3541. See Section 112(b), (c) and (e); See also National Lime Association v. EPA, 233 F.3d 625, 634 (D.C. Cir. 2000) ("EPA has a clear statutory obligation to set emission standards for each listed HAP.")

In accordance with the 1990 amendments, EPA promulgated its initial list of source categories in 1992 pursuant to section 112(c)(1) 57 Fed. Reg. 31576 (July 16, 1992). In general, once a category is listed, the EPA Administrator is required under section 112(c)(2) to establish emission standards under section 112(d) for every category of source included on the list. Id. at 31577. ("For the categories ... the Administrator lists, the Administrator shall establish emission standards under subsection (d) ..." 42 U.S.C.A. 7412(c)(2).) The standards EPA is required to promulgate must represent MACT, and every source to which the rule applies must comply with the MACT standard. See 42 U.S.C.A. §7412(d)(2); 65 Fed. Reg. at 79830 (2nd column). The emission standards required are to be published in accordance with the schedule set forth in section 112(e).* Ibid.

Having found that mercury is the HAP of greatest concern from the power industry and having listed EGUs as a source category under section 112(c), after extensive scientific research and study (as required by section 112(n)(1)(A)), EPA must now promulgate appropriate emission standards that represent the "maximum achievable control technology" for mercury, nickel and other

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* In determining where source categories should be placed on the section 112(e) schedule, EPA "shall consider the known or anticipated adverse effects of the emitted pollutants on health and the environment; the quantity and location of emissions; and the efficiency of grouping categories according to the pollutants emitted or the processes or technologies used." 57 Fed. Reg. at 31577.

HAPs emitted from power plants.* EPA can avoid this statutory requirement only if it delists EGUs as a source category in accordance with section 112(c)(9)(ii)(B), which it has not done, nor can it do.

C. EPA cannot delist EGUs as a source category except pursuant to section 112(c)(9)(B)(ii).

Under the CAA, the Administrator may delete a source category on its own motion from the section 112 list if the following determination is made:

> (ii) In the case of hazardous air pollutants that may result in adverse health effects in humans other than cancer or adverse environmental effects, a determination that emissions from no source in the category or subcategory concerned ... exceed a level which is adequate to protect public health with an ample margin of safety and no adverse environmental effect will result from emissions from any source ... [Emphasis added.][42 U.S.C.A. §7412(c)(9)(B).]

In the preamble, EPA states that it does not have to follow the delisting criteria where the original listing was in error. 69 Fed. Reg. at 4689 (2nd column). In support of this conclusion, EPA gives the example of delisting asphalt concrete manufacturers as a source category. However, according to EPA, that category is not a "major source" of HAP emissions, and should not have been listed in the first place. 69 Fed. Reg. at 4689; See also 67 Fed Reg. 6521, 6522 (February 12, 2002). EPA refers to other examples where EPA had delisted source categories because it later found out by looking at emissions data and emission factors that those sources were not major

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* For the reasons set forth below in Section IX below, EPA also has a statutory obligation to regulate all power plant HAPs emitted from coal- and oil-fired EGUs. Notwithstanding this obligation, the state commenters do not believe that EPA should postpone adequate regulations of mercury and nickel in accordance with the remainder of our comments.

sources of HAP emissions.* See 67 Fed. Reg. 7155, 7157 (February 12, 1998)(deleting "Nylon 6 Production" because "available data indicate that the category contains no major sources").

The examples cited by EPA in support of its not having to follow the delisting criteria are completely distinguishable from EGUs. Here, coal- and oil-fired EGUs were listed as a source category after years of peer-reviewed Congressionally-mandated scientific study and technical analyses performed by EPA, DOE and the NAS, as required by the CAA. In addition, EGUs are clearly a major source of mercury and other HAPs. The fact that EPA has made a reinterpretation of its existing authority under the CAA, without performing any additional technical analyses to counter its previous finding, does not meet the same standard used by EPA in its prior delistings, and is insufficient to void EPA's initial determination that the regulation of EGUs is "appropriate and necessary." Therefore, if EPA now wishes to delist EGUs, it must follow the criteria set forth at section 112(c)(9)(B)(ii) and demonstrate that there are no sources in this category that "exceed a level which is adequate to protect public health with an ample margin of safety and no adverse environmental effect will result from emissions from any source." See Section 112(c)(9)(B)(ii). Since EPA cannot make this factual determination, then it must proceed with establishing appropriate MACT emission standards under section 112(d).

D. EPA's February 26, 2004 IB MACT rule findings confirm that EPA cannot meet the delisting criteria set forth in section 112(c)(9)(B)(ii) for EGUs.

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* Generally, section 112 applies to "major sources" of HAPs. 42 U.S.C.A. §7412(c)(1). A "major source" is defined as "any stationary or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants ..." 42 U.S.C.A.§ 7412(a)(1).

On February 26, 2004, EPA signed a national emission standard for hazardous air pollutants ("NESHAP") for industrial, commercial, and institutional boilers and process heaters ("IB MACT rule") under section 112(d) of the CAA. See NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters, OAR-2002-0058 (February 26, 2004). For the source category covered by that rule, EPA has set HAP emission standards for arsenic, cadmium, chromium, hydrogen chloride, hydrogen fluoride, lead, manganese, mercury, nickel and various organic HAPs. See IB MACT rule, supra, pp. 1-2. EGUs are a larger source of these same HAPs. In the IB MACT rule, EPA concluded that "[e]xposure to these substances has been demonstrated to cause adverse health effects such as irritation to the lung, skin, and mucus membranes, effects on the central nervous system, kidney damage, and cancer." Id. at p. 2.

Since EPA must follow the delisting criteria in section 112(c)(9)(B)(ii), EPA must conclude that there are no sources in the EGU source category that "exceed[s] a level which is adequate to protect public health." Given that EGUs are a larger emitter of the same HAPs, and given the adverse public health effects caused by those HAPs as documented in the IB MACT rule, EPA will not be able to satisfy the applicable statutory criteria.

E. EPA does not have authority to adopt a trading program under section 112(n).

Section 112 requires EPA to adopt a stringent MACT standard for mercury emissions from power plants. EPA's alternative proposal to adopt a trading program under section 112(n) is therefore based on a misunderstanding of section 112(n)(1)(A). Section 112(n)(1)(A) does not provide authority for regulating utility HAPs that is distinct from section 112(d). There is nothing in the legislative history to suggest that Congress, in enacting section 112(n)(1)(A), intended to replace the detailed provisions of section 112(d) with a separate broad authority to regulate power

plant HAP emissions in a manner that EPA deems to be "appropriate and necessary." If Congress had intended for section 112(n)(1)(A)to provide an independent basis for regulation of power plant HAPs, it stands to reason that Congress would have expressed that intention clearly.

EPA's emphasis on the need for EPA to evaluate "alternative control strategies" under section 112(n)(1)(A) does not provide any legal authority for EPA to depart from the requirements of section 112(d). Indeed, in requiring EPA to evaluate and report on "alternative control strategies," Congress was simply requiring EPA to evaluate and report to Congress on the technological strategies for control of power plant HAPs emissions that would be implemented under section 112(d), specifically the types of control strategies described in section 112(d)(2)(A-E) -- such as process changes (section 112(d)(2)(A)), capture technologies (section 112(d)(2)(C)) and work practices (section 112(d)(2)(D)). This is the interpretation followed by EPA in performing the 1998 utility RTC study and in issuing the 2000 listing decision. See *Listing Decision* at 14-18; *Utility Air Toxics Report* at 23-24; See also 65 Fed. Reg. at 79828-79829. Such an interpretation is consistent with, and compelled by, the reference in the same sentence in section 112(n)(1)(A) to regulation "under this section" (as opposed to "under this chapter" or "under this subsection").

Section 112(n)(1)(A)'s directive that EPA regulate coal- and oil-fired EGUs "under this section" if "appropriate and necessary" to do so indicates Congressional intent that the preexisting authority in "this section" -- section 112 -- be used for regulation of power plant HAPs. After the "appropriate and necessary" finding was made, Congress intended for the regulation of EGUs to be under section 112, and not under subsection 112(n). Thus, EPA must utilize the authority provided by section 112(d), which requires an appropriately stringent MACT emission standard, rather than the trading program actually proposed by EPA. (As explained below in Section VIII, EPA admitted

in the Working Group process that section 112 did not provide authority for trading in setting a MACT floor.)

IV. EPA'S PROPOSED MACT STANDARD DOES NOT COMPLY WITH SECTION 112(d).

A. Background.

As set forth in the previous section, because EGUs are a correctly listed source category, and because EPA has not and cannot delist EGUs in a legally permissible manner, EPA has a non-discretionary statutory duty to promulgate an appropriate emission standard that represents the "maximum achievable control technology" for mercury emissions from power plants.

As set forth below, EPA's proposed MACT standards for mercury were calculated in a manner inconsistent with the requirements of section 112 of the CAA, and as a result, will not adequately protect human health and the environment. The MACT standards proposed are artificially high, and if implemented, could excuse most industry from having to install additional controls for at least another decade. EPA's approach is at odds with the CAA, which was enacted to require sources of HAPs to install the maximum achievable control technology in order to obtain significant reductions of these toxic pollutants expeditiously.

As a threshold matter, EPA's decision to subcategorize the coal-fired units by coal rank results in substantially weaker emissions standards than would otherwise apply. Although subcategorization is not *per se* improper under section 112, the scheme proposed by EPA here is unlawful, for at least three reasons: (1) the scheme has not been applied consistently, (2) the scheme does not accurately reflect the reality it is intended to represent, and (3) the scheme does not further the Clean Air Act's goals of protecting human health and the environment. See Section B(1), below.

Even if EPA's subcategorization scheme could be justified, EPA has not properly calculated the MACT floor for any of its proposed subcategories of coal-fired units. To the contrary, EPA has created artificially high floors by employing a variability analysis that is squarely at odds with the requirements of the Clean Air Act. For example, EPA's proposed floor for the bituminous subcategory is *seventeen times* greater than what EPA determined was the actual average emission level for the best performing 12 percent of sources in that subcategory. Even under the most deferential standard of review, that approach is not defensible. Indeed, as discussed in detail below, EPA's variability analysis is beset with legal and factual errors. See Section B(2)(iv) below.

Finally, EPA has not set beyond-the-floor standards for each of its proposed subcategories. Indeed, despite insisting on subcategory-specific *floors*, EPA rejects the possibility of subcategory-specific *beyond-the-floor* standards simply because such standards would not apply on a category-wide basis.* EPA also failed to consider many factors that it was required to consider in setting the beyond-the-floor standards. See Section C, below.

B. EPA has not properly calculated the MACT floor for coal-fired units.

1. EPA's proposed subcategorization scheme is unlawful.

The threshold defect in EPA's calculation of a MACT floor for both existing and new coal-fired units is its subcategorization of those units on the basis of coal rank. Absent subcategorization, EPA could set a single MACT floor for all coal-fired units of approximately 0.2 lb/TBtu ("pound

* EPA has proposed a subcategory-specific beyond-the-floor standard for new IGCC units. See 69 Fed. Reg. at 4679.

per trillion British thermal unit"),[*] which is stricter than the average emission limitation achieved by the top 12 percent of sources in several proposed subcategories.[**]

While the Clean Air Act appears to permit subcategorization in some circumstances, the subcategorization scheme proposed by EPA here is unlawful for at least three reasons. First, EPA has not applied its subcategorization scheme in a consistent manner. Second, EPA admits that at least 23 percent of existing sources, and an unspecified percentage of expected new sources, do not fit the subcategorization scheme. Third, the proposed scheme contravenes the goals of the Clean Air Act because it circumvents the intent to require the best control technology to be used to control HAPs.

a. EPA has applied its scheme inconsistently.

EPA begins by explaining that it has subcategorized the coal-fired units by coal rank because it believes a *category-wide* MACT standard is not feasible:

> [A] standard based on "no subcategorization" likely would be unachievable for some units. For these reasons, EPA decided that subcategorization of coal-fired units based on coal rank (fuel type) was warranted.

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[*] Consistent with 42 U.S.C. § 7412(d)(3)(A), this figure is a simple average of the actual emissions achieved by the top 12 percent of coal-fired sources for which EPA has data. Specifically, EPA has emissions data for 80 coal-fired power units. See 69 Fed. Reg. at 4673. The ten units with the lowest mercury emissions (i.e., the top performing 12 percent) consist of two coal-refuse-fired units (see 69 Fed. Reg. at 4673) and the eight best-performing bituminous-fired units (see West/ENSR report, Table 3). These ten units have an average mercury emission of 0.2 lb/TBtu.

[**] According to EPA, the average measured emissions of the requisite number of best-performing sources in each of the five proposed coal-fired subcategories were: 0.118 lb/TBtu, 0.738 lb/TBtu, 5.032 lb/TBtu, 0.088 lb/TBtu and 5.403 lb/TBtu for bituminous, subbituminous, lignite, coal-refuse, and integrated-coal gasification combined cycle ("IGCC") , respectively. 69 Fed. Reg. at 4673 (2nd - 3rd columns)

69 Fed. Reg. at 4666 (2nd column). But EPA rejects the use of pollution prevention measures for the coal-fired units because it claims such measures are not appropriate for the entire *category*. See 69 Fed. Reg. at 4668 (carryover column to 4669); 69 Fed. Reg. at 4669 (2nd column). EPA cannot have it both ways. It cannot insist that emission standards be tailored to specific subcategories and then reject standards that are so tailored because they are not appropriate for every unit in the category as a whole. Such inconsistent application of the Clean Air Act's subcategorization provisions is arbitrary and capricious.

b. EPA's scheme does not accurately reflect industry practices.

EPA's explanation for why subcategorization by coal rank is appropriate is inconsistent with its admission that 23 percent of all coal-fired units burn more than one rank of coal. According to EPA, "[t]he rank of coal to be burned has a significant impact on overall plant design," and "substitution of coal rank, in most cases, would require significant modification of retooling of a unit." 69 Fed. Reg. at 4665, 4666 (2nd column). But EPA also states that 23 percent of all coal-fired units actually burn more than one rank of coal and that "new Utility Units may still be designed to burn more than one rank of coal." 69 Fed. Reg. at 4665 (3rd column); 69 Fed. Reg. at 4679 (1st column). In sum, EPA all but concedes that its proposed subcategories are not accurate for 23 percent of the very existing units it is attempting to subcategorize. And the proposed scheme is particularly inappropriate for new units given EPA's admission that new units may be designed to burn less polluting ranks of coal and less polluting seams of coal. See 69 Fed. Reg. at 4678 (1st column).

c. The proposed scheme does not serve to protect human health and the environment.

EPA candidly admits that it has elected to subcategorize by coal rank *so as* to produce a MACT standard achievable by all units. *See* 69 Fed. Reg. at 4666 (2nd column). Thus, EPA, by its own admission, is placing a higher priority on ensuring that certain units continue to operate than on protecting human health and the environment. No basis exists for EPA to adopt a subcategorization scheme that directly contravenes the goals of the Clean Air Act. EPA appears not to have considered (except in the most cursory and conclusory fashion) alternative subcategorization schemes, such as subcategorization based on the feasability of applying certain control technologies.

2. Even assuming subcategorization is appropriate, EPA has not properly calculated the MACT floor.

a. Existing units.

According to EPA, the average measured emissions of the requisite number of best-performing sources in each of the five proposed coal-fired subcategories (i.e., top 12 percent) is:

Bituminous	0.118 lb/TBtu
Subbituminous	0.738 lb/TBtu
Lignite	5.032 lb/TBtu
Coal refuse	0.088 lb/TBtu
IGCC	5.403 lb/TBtu

69 Fed. Reg. at 4673 (2nd - 3rd columns). Based on the plain language of section 112*, EPA could adopt these levels as the MACT floor for each subcategory. Instead, EPA has adjusted the levels,

* For new sources, the MACT standard must be at least as stringent as the "emission control that is achieved in practice by the best controlled similar source." 42 U.S.C.A.§7412(d)(3 (emphasis added.); National Lime, supra, 233 F.3d at 629. For existing sources, the MACT standard must be at least as stringent as the "average emission limitation achieved by the best performing 12 percent of the existing sources." Ibid. (emphasis added.)

purportedly to account for "variability" in the emission levels actually achieved. Thus, EPA proposes standards that are as much as 17 times higher for bituminous coal than the averages listed above.*

In setting the MACT floor, "EPA must demonstrate with substantial evidence – not mere assertions that the chosen floors represent a reasonable estimate of the performance of the [best-performing] units." Northeast Maryland Waste Disposal Authority v. EPA, 2004 U.S. App. Lexis 3391, at *50-51 (D.C. Cir. Feb. 24, 2004) (internal quotations omitted) (citation omitted) (brackets in original). Here, it is apparent that EPA's variability analysis does not result in a reasonable estimate of the actual performance of the best-performing units. To the contrary, a MACT floor for bituminous coal that is *seventeen times* what EPA actually measured is unreasonable on its face.

More importantly, EPA's variability analysis is unlawful and inaccurate, for at least four reasons: First, the variability analysis is redundant and unnecessary given the manner in which EPA has chosen to measure compliance. Second, the variability analysis has been employed for an unauthorized purpose. As EPA candidly admits, it designed the analysis to produce a MACT standard that is achievable by all sources rather than to measure what is actually achieved at the best performing sources. Third, the variability analysis employs an unlawful statistical model, one based on data obtained from all sources instead of solely from the best performing sources in each subcategory, and one which improperly adjusts the MACT floors based on data it has not collected. Fourth, EPA's variability analysis depends on assumptions that EPA has not adequately explained,

* The proposed MACT floors, based on the variability analysis are 2.0, 5.8, 9.2, 0.38, and 19 lb/TBtu, respectively. 69 Fed. Reg. at 4673.

and contains several errors which prevent the analysis from providing a reasonable estimate of actual emissions performance. These points are developed further below.

i. The variability analysis is redundant and unnecessary.

The threshold problem with EPA's decision to account for variability at the MACT floor stage is that EPA has also chosen to account for variability at the compliance stage, and is, therefore, double-counting. As William Maxwell* explained in his November 26, 2003 file memorandum (the "Maxwell Memorandum") detailing how EPA accounted for variability:

> there are two fundamentally different approaches to incorporating variability into the proposed rule: (1) including variability in the MACT floor calculation, or (2) including variability in the compliance method.
>
> * * *
>
> Addressing variability in the compliance method would involve allowing an averaging time for compliance that would accommodate variations in pollutant emissions over time. For example, averaging over a month or a year of data will provide opportunity for variations in the amount of a constituent in the fuel to be accommodated without exceeding the emission limitation. This method of addressing variability is not covered in this memorandum.

Maxwell Mem., Docket A-92-55, Entry II-B-8, at 2 (emphasis added).

Despite concluding that variability can be accounted at either the MACT floor calculation stage or the compliance stage, EPA's proposed rule accounts for variability at both stages. See 69 Fed. Reg. at 4668 (2nd column) (including variability in the compliance method); 69 Fed. Reg. at 4670-75 (including variability in the MACT floor calculation). EPA has neither explained nor justified this double-counting. The result of EPA's double treatment of variability appears to be that

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* Mr. Maxwell is the EPA official designated by the EPA as the person to contact for further information about the EPA's proposed rule. See 69 Fed. Reg. at 4652.

the limit is designed to be based on worse case short term emissions, which results in a high limit, and compliance is determined on an annual average, which results in a much lower actual emission level.

ii. EPA conducted the variability analysis for an improper purpose.

Even assuming a variability analysis should be included in the MACT floor calculation, EPA's analysis here is improper. According to EPA, the reason it conducted a variability analysis at the MACT floor stage was to set a MACT floor based on what is "achievable," rather than based on what the best performing sources have actually achieved. See 69 Fed. Reg. at 4670 (2nd column) ("The EPA, therefore, decided it was necessary to develop a methodology to address the multiple sources of the observed variability in order to assure that an emission limitation value could be derived that was representative of what was actually being achieved by the best-performing units under all conditions expected to be encountered by those units.") (emphasis added); See also Dec. 2003 RTI Memorandum at 29 ("The EPA decided it was necessary to develop a methodology to address the multiple sources of the observed variability in order to assure that an emission limitation value could be derived that would be achievable.") (emphasis added); Nov. 2003 Maxwell Memorandum, Docket A-92-55, Entry II-B-8, at 1 ("The EPA decided it was necessary to develop a methodology to address the multiple sources of the observed variability in order to assure that an emission limitation value could be derived that would be achievable.") (emphasis added). It is improper for EPA to calculate MACT floors based on what is "expected" to happen, or based on what is "achievable," as opposed to what has actually been "achieved." See 42 U.S.C.A. § 7412(d)(3)(a) (requiring floor based on average emissions actually achieved); Northeast Maryland,

supra, 2004 U.S. App. Lexis 3391, at * 50-53 (rejecting EPA's attempt to develop floor that is achievable); Cement Kiln Recycling Coalition v. EPA, supra, 255 F.3d at 871-72 (same).

iii. EPA's statistical model is unlawful.

In accounting for variability, EPA has improperly relied on data obtained from all sources using certain pollution control configurations, rather than solely on data from the best performing 12 percent of sources for each subcategory. Specifically, EPA admits that in developing "correlation equations" for the best performing facilities in each subcategory, it relied on data from "all units employing the identified control configurations," rather than on data obtained solely from the best performing units. See 69 Fed. Reg. at 4672 (2nd - 3rd columns). EPA (1) determined which control configurations were being used at the best performing facilities; (2) developed correlation equations based on how those control configurations performed at "all" units, not simply those at the best performing units; and (3) then used the correlation equations to predict performance at the best performing units. Ibid.

EPA's use of data from all units using certain technologies, rather than data solely from the best performing units, is precisely what Northeast Maryland and Cement Kiln prohibit. See Northeast Maryland, supra, 2004 U.S. App. Lexis 3391, at *50-53 (rejecting EPA's attempt to set MACT floors based on what was achievable by all units using certain technology); Cement Kiln, supra, 255 F.3d at 861-63 (rejecting EPA's attempt to set MACT floors based on what was achieved under worst foreseeable circumstances faced by any unit in a given source category). EPA *may* be entitled to account for variability among the best performing sources, see Northeast Maryland, supra, 2004 U.S. App. Lexis 3391, at *50-51, but it cannot account for such variability by measuring what happens at other sources. Cement Kiln, supra, 255 F.3d at 861-63 (rejecting EPA's attempt to set

MACT floors based on what was achieved under worst foreseeable circumstances faced by any unit in a given source category).

EPA also appears to have adjusted the MACT floors to account for an apparent lack of data, rather than setting the MACT floors based on the data it has, which is what the CAA requires. The Federal Register explains that EPA's variability analysis accounted for "inter-unit variability among the top performers" by calculating a 97.5 percent upper confidence level for the mean by use of the student t-statistic." 69 Fed. Reg. at 4673 (2d column). But EPA omitted from the Federal Register an additional clarifying statement found in the Maxwell Memorandum: "This adjustment reflects the fact that the top performing sources in the data base do not represent the full population of the best performing 12 percent of coal-fired utility units." Maxwell Mem., Docket A-92-55, Entry II-B-8, at 7. Thus, the Maxwell Memorandum explains that EPA has based its variability analysis not on the data it actually has, but rather on an assumption about how other sources have performed.

The plain language of the Clean Air Act requires EPA to base its MACT floors on "the best performing 12 percent of the existing sources (*for which the Administrator has emissions information*) . . ." 42 U.S.C.A. § 7412(d)(3) (emphasis added). But what EPA appears to have done – according to the Maxwell Memorandum – is to reject a MACT floor based solely on variability among the sources for which it has data, and instead set the floor based on a variability model that accounts for a larger population of sources.

iv. The variability analysis is error-filled.

Separate and apart from the threshold legal defects detailed above, EPA's variability analysis does not reasonably estimate the average emissions achieved by the best performing sources (for any subcategory) because that analysis is beset with statistical errors, and also with assumptions that

have not been adequately explained or justified. These defects in EPA's analysis are discussed in detail in Attachment A hereto and in Appendix B to the comments submitted by the New Jersey Department of Environmental Protection ("NJDEP App. B"), which is being submitted to this rulemaking docket. In general terms, however, the technical problems in EPA's analysis include the following:

First, EPA's analysis depends heavily on equations linking mercury emissions with chlorine content, but those equations are suspect. As noted above, the equations suffer from a threshold legal defect because they are derived from data obtained from units outside the top 12 percent in each proposed subcategory. See Section B(2)(a)(iii), above. But the equations also have technical flaws. EPA appears to assume that a relationship exists between chlorine content and control of mercury emissions, but EPA has not provided adequate support for such an assumption and data available to the EPA suggests that the presumed relationship is questionable. See NJDEP App. B at pp. 31-33. EPA has also applied its equations in an inconsistent manner. Id. at pp. 34-36.

Second, similar problems confound EPA's calculation of mercury emissions distributions for each proposed subcategory. EPA begins with an assumption that may be correct but which EPA has not adequately supported -- that mercury emissions have a linear relation to mercury content in coal, regardless of control technology used. See also NJDEP App. B at p. 36, n.11. In any event, EPA's "distributions" for each proposed subcategory are inconsistent with EPA's own test averages for those subcategories. See Attachment A hereto. Finally, EPA's procedure for calculating MACT floor values from its "distributions" is incorrect. EPA failed to calculate properly a cumulative frequency distribution for mercury emissions from the best performing sources. Rather than accounting for variability among the *average* emissions from the best performing sources, EPA has

instead taken the average of what it estimates to be the highest level of emissions 97.5 percent of the time (that is, the average emissions at the 97.5 percentile for the best performing units). Id.

b. New units.

EPA's variability analysis for new units suffers from the same flaws as the variability analysis for the existing units. But EPA's calculation of the MACT floor for new units suffers from an additional flaw as well. Specifically, EPA has improperly set the MACT floor for new units based on emissions achieved by a particular emission control *device*, rather than on the emission *control* actually achieved by the best controlled source.

EPA claims the "Hg emission factor" for particular technologies at the best-controlled units was 0.132 lb/TBtu for bituminous-fired units, 0.663 lb/TBtu for subbituminous units and 6.902 lb/TBtu for lignite-fired units. See 69 Fed. Reg. at 4678 (3rd column). In each case, that is higher than the "emission rates" at the best-controlled unit for each category. See 69 Fed. Reg. at 4673 (2nd -3rd columns). Indeed, it is higher than the *average emission rate for the top 12 percent* of the best performing bituminous and lignite units. Ibid. EPA is thus setting a weaker MACT standard than what is actually "achieved in practice by the best controlled similar source[,]" in violation of the CAA. See 42 U.S.C.A § 7412(d)(3).

Finally, to the extent that EPA's MACT floor values for new units are based on "distributions" that we have shown to be defective (see above and Attachment A; see also NJDEP App. B), those floor values must be recalculated in an appropriate manner.

C. EPA has not properly calculated the beyond-the-floor standards.

After EPA sets a MACT floor, it must then determine "if standards more stringent than those actually achieved by the best performing sources are possible." Mossville Environmental Action

Now v. EPA, No. 02-1282, slip op. at 3-4 (D.C. Cir. June 18, 2004). These standards are known as "beyond-the-floor standards." See 42 U.S.C.A. §7412(d)(2).

For both existing and new units, EPA's determination of beyond-the-floor standards suffers from three fatal problems: First, EPA has refused to set subcategory-specific beyond-the-floor standards even as it has insisted upon subcategory-specific floors. EPA's internally inconsistent subcategorization analysis constitutes an arbitrary and capricious interpretation of the Clean Air Act. Second, in evaluating beyond-the-floor standards, EPA failed to consider several factors that it was required to consider by the Clean Air Act. Third, EPA ignores evidence in the administrative record that additional mercury control technologies are commercially available. In addition to these threshold legal defects, EPA ignores that stricter beyond-the-floor standards are required to adequately protect human health and the environment. See 42 U.S.C.A. §7412(d)(2).

1. EPA's subcategorization analysis is internally inconsistent.

As noted above, EPA proposes separate MACT floors for each of five proposed subcategories. But when it arrives at the beyond-the-floor analysis, EPA concludes that those standards should be set on a category-wide basis. See 69 Fed. Reg. at 4676 (3rd column) (rejecting use of SCR as a beyond-the-floor MACT standard for any subcategory of existing units because EPA believes it has not been tested for every subcategory); 69 Fed. Reg. at 4679 (3rd column) (same conclusion for new units). EPA offers no explanation for this fundamental inconsistency. And EPA cannot have it both ways: Either it is appropriate to tailor the MACT standards to specific subcategories, or it is not. Rather than interpret the Clean Air Act's subcategorization provisions

in an internally consistent manner, EPA appears to have applied them in an *ad hoc* fashion designed to achieve extraordinarily lenient standards.*

2. EPA failed to consider all the factors it is required to consider.

EPA's analysis of beyond-the-floor standards does not include any discussion of the non-air quality health and environmental benefits of alternative pollution control methods and technologies. That oversight alone invalidates the proposed rule. See National Lime, supra, 233 F.3d at 634-35 ("[B]ecause EPA failed to consider non-air quality health and environmental impacts of potential beyond-the-floor standards for HAP metals . . . we will remand for the beyond-the-floor determination . . .."). A full analysis of the non-air quality health and environmental impacts must be done in compliance with the CAA. See 42 U.S.C.A. §7412(d)(2).

3. Alternative mercury control technologies and methods are commercially viable.

EPA limits its discussion of alternative pollution control measures to two technologies, sorbent injection and selective catalytic reduction ("SCR"). The administrative record, however, reveals that many more options are available. Indeed, over three years ago, the EPA itself concluded that the use of scrubbers in conjunction with fabric filters and spray dryer adsorbers had shown "mercury capture in excess of 90 percent." 65 Fed. Reg. at 79828. EPA also concluded that combining mercury control technologies with other pollutant control technologies "can substantially reduce or offset the costs of HAP control." Id. at 79829. Other material in the administrative record confirms that cost-effective mercury reduction technologies are readily available. See Mercury Air Pollution: The Case for Rigorous MACT Standards for Subbituminous Coal, OAR-2002-0056-

* As noted, EPA has proposed a subcategory-specific beyond-the-floor standard for new IGCC units. See 69 Fed. Reg. at 4679. This inconsistency, too, is unexplained.

0028. The experience of New Jersey in controlling mercury emissions from municipal solid waste incinerators through the use of carbon injection also demonstrates the viability of such measures.

4. Stricter beyond-the-floor standards are required to protect human health and the environment.

As set forth in Section II of these comments, greater reductions in mercury emissions are needed to adequately protect humans and the environment from the harmful effects of mercury. Indeed, as detailed in that section, current mercury levels in fish are so high as to seriously compromise the ability of many people to eat fish. Stricter beyond-the-floor standards are required to begin to ameliorate that problem.

V. EPA IS NOT AUTHORIZED TO REGULATE POWER PLANT HAPS UNDER SECTION 111.

A. EPA misconstrues section 112(n)(1)(A) to provide that HAP emissions from power plants need not be regulated under section 112 if another section of the Act may be used in the future to regulate HAP emissions.

Section 112(n)(1)(A) was the product of a Congressional compromise enacted as part of the 1990 amendments of the CAA. Congress recognized that power plants were subject to requirements which other sources were not subject to, the most important of which was the new Title IV acid rain program. Accordingly, rather than requiring mercury and other hazardous pollutants to be regulated in the same manner as HAPs from other sources (e.g., without first having to perform a threshold scientific analysis), Congress required, in section 112(n)(1)(A), that EPA study whether the regulation of HAPs from power plants was necessary in light of the emission reductions achieved under the other requirements applicable to power plants. Congress required EPA to regulate power plant HAPs under section 112 if it was "appropriate and necessary" to do so after the implementation of other requirements of the Act.

Notably, Congress gave EPA only three years to complete this study and to determine whether regulation was "appropriate and necessary" under section 112. Accordingly, Congress did not intend for EPA to wait until other CAA programs were fully implemented to make its decision. Instead, knowing the scope of those other provisions, such as Title IV, Congress required EPA to make the projection of whether regulation under section 112 was "appropriate and necessary" without awaiting the outcome of regulation under other provisions of the Act.

Although EPA initially missed the statutory deadline for completion of the section 112(n)(1)(A) study, it did eventually undertake the study, completing it in 1998, five years late. Two years later, in its regulatory finding, EPA determined that the regulation of HAP emissions from coal- and oil-fired EGUs was both "appropriate and necessary" based on its technical evaluation of the risks posed by mercury emissions from power plants, in particular. See 65 Fed. Reg. at 79826 (1st column). As a result of the utility RTC and the subsequent studies described above, EPA is required to regulate power plant HAP emissions, including mercury, under section 112, rather than under any other provision of the Act.

As described above, section 112(n)(1)(A) required EPA to perform a study of the public health hazards "reasonably anticipated to occur as a result of emissions" by EGUs of section 112(b) HAPs "after imposition of the requirements of this chapter." Under EPA's reading of this section, Congress required EPA to scour the CAA to determine whether any other authority beside section 112 existed for the regulation of mercury. EPA's interpretation would mean, in effect, that Congress asked EPA to determine what authority, other than section 112, could be used to regulate HAPs, such as mercury. However, Congress presumably does not need EPA to tell it what authority

Congress provided EPA for the regulation of mercury. Specifically, Congress does not need EPA to tell it whether section 111 is available as a matter of law.*

To the contrary, under section 112(n)(1)(A), Congress required EPA to use its *technical* expertise to make a technical and scientific determination -- whether the risks to public health from exposure to mercury make it "appropriate and necessary" to regulate this HAP under section 112. If Congress had intended EPA to regulate mercury emissions under section 111 – or even to consider doing so -- it would have so provided in the legislation, rather than specifying section 112 as the authority to use for the regulation of HAPs.

B. EPA's proposal does not meet the requirements for standards of performance under section 111(d).

Although EPA is not authorized to regulate power plant HAPs, such as mercury, under section 111(d), even if it were, EPA's proposed cap and trade program is unauthorized because it fails to meet the requirements for standards of performance set out in that section. A "standard of performance" is defined as:

> a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. [Emphasis added.] [42 U.S.C.A. §7411(a).]

* In support of its reading of section 112(n), EPA relies on a statement of Congressman Oxley. EPA's reliance is misplaced because statements of individual legislators are entitled to little or no weight in construing a statute. National Small Shipments Traffic Conf., Inc. v. Civil Aeronautics Board, 618 F.2d 819, 828 (D.C. Cir. 1980) (statutory language should control over statements inserted in the legislative history).

For the reasons set forth below, EPA's proposed cap and trade program is not the "best system of emission reduction" which has been adequately demonstrated. See 42 U.S.C.A. § 7411(a)(1). EPA has failed to take into account the nonair quality health and environmental impacts associated with its proposed program, as required under section 111. If it had, this analysis would have revealed that a cap and trade program is inappropriate for the regulation of a HAP such as mercury because of: (1) the serious environmental and health risks that result from mercury exposure; and (2) the way in which mercury is frequently deposited locally, creating "hot spots" of pollution with associated impacts to public and environmental health. Furthermore, the caps in EPA's proposed program, in particular, are not stringent enough, will be achieved too far into the future, and do not reflect mercury emission controls that can be implemented based upon technology that has already been adequately demonstrated, and therefore do not meet the standard of "best system of emission reduction" required under the Act. Ibid.

1. A cap and trade program for mercury is not an appropriate standard of performance under section 111.

EPA cites to a House Report regarding the 1977 Clean Air Act Amendments as support for the proposition that a "standard of performance" under section 111 can include a cap and trade program. See 69 Fed. Reg. at 4697, n. 12 (citing "Clean Air Act Amendments of 1977," Committee on Interstate and Foreign Commerce, H.R. Rep. No. 95-294 at 195). While section 111's requirements exhibit increased flexibility in comparison to the standards of section 112, at the very least, alternative standards were required to be just as effective in reducing emissions:

> While the standards under section 111(b) of the act must include requirements for the use of the best technological system, the committee intends to permit sufficient flexibility to encourage the development of new and improved technological systems. Thus, new subsection (g) of section 111 of the act would require the

> Administrator to permit use of a technological system which has not been designated by the Administrator, if the source proposing to use such technology demonstrates that it will achieve at least a comparable percentage reduction in the pollution from the source as would be achieved by the designated technologies. [Emphasis added.] [H.R. Rep. No. 95-294 at 189].

Moreover, the committee expected the Administrator to include numerical performance standards whenever technological advances, improved measurement methods, or other requirements for use of the best technological system make numerical standards practicable. Id. at 190. As noted above and in EPA's own proposed rule, numerical standards for controlling mercury are clearly practicable, and thus should be implemented in any rule to control mercury. See 69 Fed. Reg. at 4690 (1st column). EPA's proposed rule fails to show that its cap and trade program "will achieve at least a comparable percentage of reduction" and therefore runs contrary to the Congressional intent underlying section 111. Agency statements pointing to House Reports regarding the 1977 Clean Air Act amendments should not be relied upon in support of the proposed cap and trade program.

2. EPA's proposed mercury cap and trade program is not based on the application of the "best system of emission reduction," as required by section 111.

EPA's proposed cap and trade program is clearly not the best system of emissions reductions, as the proposal: (1) fails to adequately account for the clear health and environmental impacts inherent in its application; (2) contains a time line for compliance and weak emissions cap that are an unlawful and inappropriate substitute to the required source specific technology standards; and (3) relies upon EPA's justification of an effective trading program which is inappropriately grounded in previous trading programs for very different types of pollutants.

a. The cap and trade program is not the "best system for emission reduction" as it does not adequately account for impacts to public and environmental health.

In the proposed rule, EPA acknowledges that:

> [T]he overall cap level may not eliminate the risk of unacceptable adverse health effects of Hg emissions. Moreover, a cap-and-trade program raises the possibility that any particular utility may opt to purchase allowances, instead of implementing controls, and that this may result in continued Hg emissions at the previous, uncontrolled levels from that Utility Unit. These emissions may have adverse health impacts within the local area. [Emphasis added.] [69 Fed. Reg. at 4686 (3rd column)].

EPA's regulatory response to this possibility is inadequate. As discussed in Section VI below, trading in mercury is inappropriate because extensive studies have shown that mercury emissions may be deposited in close proximity to power plants resulting in "hot spots" of contamination. Section 111 requires the EPA Administrator to take into account any nonair quality health and environmental impacts of a proposed system of emissions reduction. EPA's candid acknowledgment that its cap and trade program may not eliminate unacceptable human health risks from mercury indicates that the agency's proposed program not only fails to meet the requirements for a standard of performance under section 111, but also undermines the stated purposes of the Clean Air Act to "protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare." 42 U.S.C.A § 7401(b)(1). EPA should abandon its ill advised trading program, and follow the requirements of the Clean Air Act by implementing an effective MACT standard under section 112(d) for mercury, nickel, and other HAPs emitted by power plants in significant amounts.

b. The proposed trading program is not the best system for emission reduction because its time line for compliance is impermissibly long.

The nonair quality health and environmental impacts of the proposed rule are clearly adversely affected by the time line for compliance with the rule's requirements. The Administrator's determination in the proposed rule that a cap and trade program with major elements of its compliance schedule not coming into effect until 2018 is the best system of emission reduction is flawed in light of the better systems available under section 112. Section 112(i)(3) of the CAA specifies that an existing source must comply with an emission standard within three years of the effective date of a final rule, unless extended pursuant to section 112(i)(3)(B) or (B)(4). A new source regulated by section 112 must be in compliance immediately upon startup or the date of publication of a final rule in the Federal Register, whichever is later.

By contrast, the proposed section 111(d) performance standard includes a "first phase cap effective in 2010," and a "second phase cap," effective in 2018 . 69 Fed. Reg. at 4687 (2nd column). The proposed rule, however, does not quantify the "Phase I" cap, but rather expresses it as a "reflection" of the "Hg reductions expected with SO_2 and NOx in the IAQR in 2010." 69 Fed. Reg. at 4703 (2nd column). Thus, sources are not required to hold mercury allowances until January 1, 2010, and are not required to control mercury emissions even as a "co-benefit" until that time. EPA proposes a Phase II 15 ton cap, or an eventual 70 percent reduction of mercury emissions from utilities, well after 2018. Ibid. Even with the extensions for compliance allowed under section 112, much earlier mercury reductions would occur under section 112, as opposed to section 111.

Therefore, under EPA's proposed rule, there will be no meaningful mercury reductions from the power sector until fourteen years in the future, and the only reductions that may be achieved for the eight years between 2010 and 2018 will be unquantified "co-benefits" of the IAQR. By choosing to regulate mercury under section 111, as opposed to section 112, EPA is taking a three-

year compliance requirement and turning it into a more than fourteen-year compliance requirement.* This approach is in direct contrast to the D.C. Circuit's ruling in the National Lime case, in which the Court explained that the 1990 amendments were intended, in part, to remedy EPA's slow progress in regulating HAPs.

In spite of the admitted deficiencies in the program to meet the 70 percent goal, under the proposal, EPA will wait **until after implementation of the control requirements in 2010 and 2018** to "evaluate the emission levels, attendant health risks, and available control mechanisms and determine whether the actual reductions achieved under this program significantly differ from the outcome predicted by our current analysis." 69 Fed. Reg. at 4686-4687 (3rd column and 1st column); see also 69 Fed. Reg. at 4703 (1st column) ("We retain authority to make adjustments to the program if we find remaining areas with heavy, localized emissions and higher health risks(i.e., if we find 'hot spots')"). Therefore, instead of forcing each utility to utilize technology that is both: (1) demonstrated today (See 65 Fed. Reg. at 79828; See also discussion point on MACT standard above), and (2) effective in reducing mercury emissions far beyond what will be achieved later through EPA's proposed cap and trade program, EPA plans to implement an admittedly risky "wait and see" approach.

Considering the mass loading and pernicious health effects known to EPA resulting from the mercury methylation and biomagnification cycle, the reliance upon an uncertain "co-benefit"

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* Citing to members of EPA's own staff, EPA models show that the 70% reductions that are expected from the section 111 mercury trading program "would not be achieved even by 2025 and perhaps not until after 2030." Jennifer Lee, "E.P.A. May Tighten Its Proposal on Mercury," *New York Times*, March 16, 2004; See also Tom Hamburger and Alan C. Miller, "Mercury Emissions Rule Geared to Benefit Industry, Staffers Say," *Los Angeles Times*, March 16, 2004.

performance standard, which allows 48 tons per year of uncontrolled mercury emissions until at least 2010, and minor reductions between 2010 and 2018, is without scientific justification or legal support. In light of the more expeditious time line for compliance and the greater HAP emission reductions that will follow from an appropriate MACT standard under section 112, EPA's position that the cap and trade proposal is the best system of reduction is incorrect and fails to take into account the public health impacts of postponing emission reductions for more than a decade.

c. EPA's assertion that the proposed cap and trade program is the "best system of emissions reduction" is unsupported by the proposal itself.

EPA provides no factual support for its conclusion that a cap and trade program reflects the "best system of emissions reductions" under section 111. Its explanations are inconsistent and fail to meet the statutory and case law criteria. First, the Agency merely explains that it has been successful in reducing SO_2 emissions under Title IV's Acid Rain Program and in reducing NOx emissions pursuant to the NOx SIP Call rule, both of which implement a cap and trade method. 69 Fed. Reg. at 4697 (3rd column). Therefore, EPA concludes, a cap and trade program for mercury emissions will be the "best." Id. at 4698 (2nd column). The Agency comes to this conclusion without offering any support for its contention that the success of a system for reduction of one type of pollutant necessarily means that system is the "best" available for another, very different type of pollutant. EPA fails to make any distinctions between criteria pollutants (which are, clearly, not hazardous air pollutants) and HAPs, or to explain why it is appropriate to compare trading programs for the different categories. Nor does EPA demonstrate that its criteria pollutant trading programs have been successful. To this day, the Phase II SO_2 cap has not been achieved. Also, the effectiveness of EPA's NOx SIP call is not yet known.

EPA then explains that its cap and trade system will provide "the greatest certainty that a specific level of emissions will be attained and maintained since a predetermined level of reductions is ensured." Ibid. Because of EPA's minimal explanation, it is unclear why a source-specific emission limitation can be exceeded while, under a cap and trade program, emissions cannot go beyond the caps. EPA's own materials indicate that, by August 2000, the air toxic MACT standards issued under section 112, when implemented, "will reduce air toxics emissions by about 1.5 million tons per year - almost 15 times the reduction achieved prior to 1990." USEPA, Taking Toxics Out of the Air, August 2000. The Agency's own website further describes these source specific MACT standards as "significant steps to dramatically reduce toxic air pollutants and provide important health protections for Americans nationwide." See http://www.epa.gov/ttn/atw/nata/natsatr.html#stat. There is no support for EPA's conclusion that trading would provide a greater level of certainty than the source specific emissions limitations required under section 112. In fact, under EPA's proposed "safety-valve mechanism," it appears that sources could exceed the cap by borrowing credits from future years just because the cost of an allowance exceeds a pre-determined "safety-valve" price (EPA proposes $2,187.50). See 69 Fed. Reg. at 4704 (1st column). It is clear that the "safety valve" mechanism greatly enhances the uncertainty involved in the proposed cap and trade program, and weakens any argument that the proposed program is the "best system of emission reduction." The legal and substantive problems with the safety-valve proposal are discussed in more detail in Section VII below.

C. Congress did not intend for power plant HAPs to be regulated under section 111(d).

In reaching its interpretation of the interplay of sections 111(d) and 112, EPA misconstrues section 111(d). Congress did not intend section 111(d) to serve as a substitute for regulation under

section 108 or 112 – it is just a backstop for the regulation of existing sources when emissions from those sources are not covered by the programs attributable to criteria pollutants (section 108) or to hazardous air pollutants (section 112). Section 111(d) provides, in pertinent part:

> (1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 7410 of this title under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 7408(a) of this title or emitted from a source category which is regulated under section 7412 of this title but (ii) to which a standard of performance under this section would apply if such existing source were a new source ...

An interpretation of section 111(d), and its relation to section 112, that makes sense of both provisions is that section 111(d) is essentially a back-up provision, requiring state regulation of emissions from existing sources if emissions from new sources in the category are regulated by a new source performance standard, but only if the emissions are not criteria pollutants regulated under sections 108-110, or HAPs regulated under section 112. This interpretation makes sense because it respects and implements Congressional intent that criteria pollutants be regulated under sections 108-110 and that HAPs be regulated under section 112. The design of those provisions reveals that they are tailored to emissions of criteria pollutants and HAPs, respectively, unlike section 111(d). Contrary to sections 108-110 and 112, which contain detailed provisions prescribing the means of regulating criteria pollutants and HAPs, section 111(d) is devoid of any detail, evidencing Congress's intent that it act as a "catch-all" provision for pollutants that are not subject to regulation under sections 108-110 or section 112. Because mercury is a HAP, and power plants

are listed sources of HAP emissions, section 112 provides the clear statutory mechanism for the regulation of power plant HAP emissions under section 112. As a result, regulation under section 111(d) is unavailable.

Furthermore, since coal- and oil-fired EGUs are a listed source category under section 112(c), EPA is faced with the obstacle that it must delist power plants in order to go forward with regulation under section 111(d). As discussed in Section III.C. above, EPA's answer – that it erred in listing power plants in 2000 (69 Fed. Reg. at 4689) – is unavailing. Even under EPA's construction of section 111(d), the actual listing of a source category under section 112(c) precludes EPA from requiring state regulation of that source category under section 111(d). Once EPA listed electric generating units as a source of HAPs under section 112(c), EPA no longer had authority to regulate mercury emissions under section 111(d). EPA's determination that it can regulate under section 111(d) because it supposedly erred in listing the source category under section 112(c) is a result-oriented interpretation without any foundation in the statutory language or legislative intent.

1. EPA's interpretation that section 111(d) authorizes it to regulate power plant HAPs relies on a non-existent conflict between the House and Senate amendments.

EPA's attempt to find support for its interpretation of section 111(d) is grounded in its attempt to find a conflict, where none exists, between the 1990 House and Senate versions of amendments to section 111(d). It is true that different language appears in the House and Senate versions, however, this different language does not affect the meaning of section 111(d), which is not intended to be authority for the regulation of HAP emissions, including mercury, from power plants.

Prior to the 1990 amendments, section 111(d) provided:

> The Administrator shall prescribe regulations . . . which (A) establishes standards of performance for any existing source for any air pollutant (i) for which . . . is not included on a list published under section 7408(a) or 7412(b)(1)(A) of this title, but (ii) to which a standard of performance under this section would apply if such existing source were a new source. [See 69 Fed. Reg. at 4685 (1st column.]

In 1990, section 111(d) was amended. See Public Law 101-549 (November 15, 1990). P.L. 101-549 contains two sections, both of which seek to amend section 111(d). The first section, the Senate Amendment, is found at section 302, which is the section specifically addressed to hazardous air pollutants. The Senate Amendment, which appears under the heading, "Conforming Amendments," reads, "Section 111(d)(1) of the Clean Air Act is amended by striking '112(b)(1)(A)' and inserting in lieu thereof '112(b)'". See Pub. Law 101-549, § 302(a) (Nov. 15, 1990). The House Amendment, which appears in a "Miscellaneous Provision" section under Title I of the CAA, struck the language, "or 112(b)(1)(A)" and inserted "or emitted from a source category which is regulated under section 112." See Pub. Law 101-549, § 108(g) (Nov. 15, 1990). The U.S. Code, which codified P.L. 101-549, contains only the House Amendment and failed to incorporate the clear Senate language. EPA is trying to conclude that the different language used in the Senate and House Amendments somehow justifies its use of section 111(d) as the proper authority to regulate HAPs emitted from power plants. 69 Fed. Reg. at 4685. This conclusion is unfounded when the clear meaning of both amendments is that emissions that are subject to regulation under section 112 are not subject to regulation under section 111(d).

Even though the State commenters do not believe that there is a conflict between the House and Senate versions of the amendments to section 111(d), there is different language used in each

amendment. Generally, when there is a conflict between the Statutes at Large and the U.S. Code, and the U.S. Code has not been enacted into positive law (like with Title 42), the Statutes at Large control. See 1 U.S.C.A. §204(a); American Bank & Trust Co. v. Dallas County, 463 U.S. 855, 864 n. 8 (1983); United States v. Welden, 377 U.S. 95, 98-99 n. 4 (1963); United States v. Ward, 131 F.3d 335, 339-340 (3d. Cir. 1997). Here, where the Statutes at Large contain different language amending the same section of the CAA, the two sections must be "harmonized."

As stated above, the Senate Amendment provided that section 111(d) would not be available authority to regulate HAPs that were listed pursuant to section 112(b). The House Amendment, provided that section 111(d) could not be used as authority to regulate HAPs that were emitted by a source category that was regulated under section 112. Applying the harmonization principle from Citizens to Save Spencer County v. EPA, 600 F.2d 844 (D.C. Cir. 1979) to the different language used in the amendments to section 111(d), as EPA has stated should be done, results in the conclusion that section 111(d) is only applicable to sources of pollutants other than HAPs. The Spencer County court directed an agency, in attempting to interpret clearly conflicting statutory provisions that it is directed to implement:

> [T]o look for guidance to the statute as a whole and to consider the underlying goals and purposes of the legislature in enacting the statute, while avoiding unnecessary hardship or surprise to affected parties and remaining within the general statutory bounds prescribed. [Spencer County, supra, 600 F.2d at 871.]

EPA has failed to follow these harmonization principles. See 69 Fed. Reg. at 4685 (2nd and 3rd columns). In the Spencer County case, the court set out to resolve a clear conflict between section 165 and section 169 of the CAA as amended in 1977. In doing so, it looked to the following: (1) the plain language of the conflicting provisions; (2) surrounding, relevant sections within the CAA;

(3) legislative history; and (4) the overall scheme of the CAA. A similar review of section 111(d) demonstrates that the section does not contain authorization for EPA to regulate HAPs.

EPA failed to give meaning to other, relevant CAA provisions, such as section 112(d)(1), which, as the D.C. Circuit in National Lime Association v. EPA, supra, 233 F. 3d at 633 confirmed, requires EPA to regulate major sources of HAPS that are listed: "The Administrator shall promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air pollutants listed for regulation"(emphasis added). See also Id. at 634 (EPA has a "clear statutory obligation to set emission standards for each listed HAP"). EPA's failure to give meaning to other, relevant CAA provisions is contrary to Spencer County as well as the fundamental canons of statutory construction. See Davis v. Michigan Dept. of Treasury, 489 U.S. 803, 809 (1989) ("It is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.").

The legislative history also supports an interpretation of section 111(d) whereby sources of listed HAPs are subject to section 112. For example, the D.C. Circuit explained that one purpose of section 112 in the 1990 CAA Amendments was to remedy EPA's slow progress in regulating HAPs. See National Lime Association v. EPA, supra, 233 F. 3d at 634(citing to S.REP. No. 101-228 at 128 (1989)("In 18 years, EPA has regulated only some sources of only seven chemicals . . . The legislation reported by the Committee would entirely restructure the existing law, so that toxics might be adequately regulated by the Federal Government"; H.R. REP. No. 101-490, pt. 1, at 322 (1990)("Since 1970, EPA has listed only eight substances as hazardous air pollutants . . . and has promulgated emissions standards for seven of them")). Therefore, section 112--not section 111-

was strengthened, and the direction to EPA by Congress was made more explicit, in response to the lack of regulation of sources of HAPs.

Congress's reference to section 112 in section 111(d) (either with respect to HAPs that are listed or to sources that are regulated pursuant to section 112) makes it clear that the overall scheme of section 111 is to regulate those sources not emitting HAPs. EPA even admits that it "has historically regulated non-HAP under section 111(d), even where those non-HAP were emitted from a source category actually regulated under section 112." 69 Fed. Reg. at 4686 (1st column). Further, EPA has never before regulated a major source of HAP pursuant to section 111. Likewise, section 112 is intended to regulate sources that are emitting HAPs, as EPA clearly acknowledges. Cf. 68 Fed. Reg. 70904, 70905 (December 19, 2003) ("Section 112 of the CAA contains our authorities for reducing emissions of hazardous air pollutants").

Accordingly, once a pollutant is listed as a HAP under section 112, it shall not be regulated by a standard of performance pursuant to section 111. Because mercury is a listed pollutant under section 112(b), EPA is prohibited from regulating sources of mercury pursuant to 111(d).

Finally, EPA has already found that it is "appropriate and necessary" to regulate utilities for mercury. See December 2000 Regulatory Finding. As stated above, once this finding is made, EPA must regulate HAPs from the listed source category. See 42 U.S.C.A. §7412(c)(2). Simply because EPA has failed to complete the required rulemaking, which was triggered by the December 2000 regulatory finding and the subsequent listing of power plants under section 112(c), EPA should not be allowed to escape the CAA's clear direction under section 112(d). Indeed, EPA admits that the purpose of the House Amendment was to allow the Agency to regulate pollutants which were not regulated under section 112. See 69 Fed. Reg. at 4685 (3rd column). Given the December 2000

regulatory finding, the listing of coal-and oil-fired EGUs as a source category, and the resulting statutory obligation to regulate the HAP emissions from EGUs, it is an arbitrary and unreasonable interpretation to say that EGUs were not among the categories of sources of mercury to which regulation under section 112 applied. But for EPA's change in its own reading of the CAA and its failure to complete its statutory obligations, utilities would be regulated for their mercury emissions pursuant to section 112.

2. Even if the regulation of HAPs were available under section 111(d), EPA's proposed remedy under section 111(d) is not an adequate substitute for regulation under section 112.

In its proposal, EPA interprets section 112(n) as not requiring regulation under section 112 if regulation under another provision of the Act is "adequate." 69 Fed. Reg. at 4684 (1st column). Even if EPA's construction of section 112(n) were reasonable, it does not enable EPA to circumvent regulation of power plant HAPs under section 112 because, in this case, EPA's proposed regulation of mercury under section 111(d) is not "adequate."

First, even if the proposed section 111(d) trading program is legal, the emission reductions required under the section 111(d) program compare unfavorably with the emission reductions that would be achieved under a MACT emissions standard that complies with the requirements of section 112(d). Nothing in section 111(d) requires that sources meet the emission rates achieved by the top 12 percent of sources within the relevant source category, as required by section 112(d). As explained in Section IV above, although EPA's proposed MACT determinations are in error, MACT emission rates that comply with section 112(d) would reduce mercury emissions nationwide from the power sector much more extensively than EPA's section 111(d) proposal. In addition, to the extent that it allows sources to avoid the need for controls by purchasing allowances, EPA concedes

that the section 111(d) approach will allow sources to emit at levels that exceed MACT, increasing local exposures. 69 Fed. Reg. at 4686 (3rd column). EPA should not be experimenting with a trading program for toxic hazardous air pollutants, such as mercury.

Second, the emission reductions under EPA's section 111(d) proposal are inadequate because the section 111(d) proposal will not, if implemented, obtain emission reductions as rapidly as implementation of appropriate and defensible MACT requirements that comply with section 112(d). Under section 112(d), sources must comply with a MACT within three years of the effective date of the standard (with the possibility of a one-year extension and two-year Presidential exemptions). In contrast, EPA's section 111(d) proposal does not require emission reductions until 2010 (for the first stage) and 2018 (for full implementation), allowing much more time for compliance, even with the extensions authorized by section 112(i)(3)(B) or (B)(4). Further, EPA models show that full compliance with the section 111(d) cap may not be achieved until 2025, or even 2030. Indeed, the first stage does not require any mercury control efforts at all, instead relying solely on strategies being developed to comply with the IAQR proposal. See 69 Fed. Reg. at 4566. These strategies only require control of some, but not all, EGUs.

There is no statutory basis for EPA to postpone full regulation of mercury from EGUs until 2018, when the second stage of mercury reductions commences. 69 Fed. Reg. at 4698 (1st column). In essence, EPA's proposal is based on the unstated premise that the mercury co-benefits from the IAQR program constitute an adequate mercury control program only until 2018. Necessarily underlying the second phase is the premise that the IAQR reductions are not adequate in 2018; otherwise, it is unclear, under EPA's reasoning, what authority EPA has to require the additional

reductions in 2018. However, if the IAQR program is not adequate in 2018, it is not adequate in 2007 either.

Third, section 111(d) provides an inadequate substitute because it will not likely withstand judicial review if, and when, it is issued, in light of the serious questions being raised in these comments and others about the legality of the section 111(d) approach. For example, as we explain above, Congress did not intend for section 111(d) to be used for pollutants and/or source categories regulated under sections 108-110 or 112. Furthermore, the legality of a trading program for mercury under section 111(d) is dubious. Indeed, EPA concedes that nothing in the statute or the legislative history provides that a trading program may constitute a "standard of performance" under section 111. 69 Fed. Reg. at 4697, n.12. Even if a trading program under section 111(d) might be appropriate in some circumstances – i.e. for pollutants without any local impacts -- it is not appropriate for mercury in light of the hot spot issues discussed in Section VI below.*

Fourth, but perhaps most importantly, EPA's proposal is inadequate to protect public health and the environment from the dangers attributable to mercury exposure. Indeed, EPA concedes that it is uncertain whether the trading program adequately protects against excessive local exposures, and that it is continuing to investigate. 69 Fed. Reg. at 4699 (2nd and 3rd columns). Total nationwide mercury emissions can be reduced to 5 to 10 tons per year in order to provide much greater protection against the public health dangers posed by mercury. In fact, EPA admits that section 111(d) may not be adequate (See 69 Fed. Reg. at 4686, 3d column), but only says that it will evaluate further after implementation of section 111(d) program in 2018, fourteen years from now.

* In addition, as explained in Section VII below, the "safety valve" provision, which makes any emission reductions achieved under the section 111(d) trading program uncertain, and fails to force technology development, is not likely to survive judicial review.

Even if EPA is correct in its interpretation that regulation under section 112 is not necessary if other programs adequately reduce mercury emissions, it must make that adequacy determination now. (In fact, it should have made that determination in 1993.) Instead, it postpones the adequacy determination until 2018, when it will evaluate whether its trading program has adequately addressed the risks posed by mercury. Ibid.

This postponing of *adequate* regulation is inconsistent with the requirements of section 112, which require expeditious control of HAP emissions generally within three years. See 42 U.S.C.A. §7412(i)(3). Indeed, EPA's concession that section 111(d) regulation may not be adequate means that EPA's prior finding that regulation is "appropriate and necessary" remains valid. In other words, regulation under section 112 remains "appropriate and necessary" because EPA has no basis to conclude that section 111(d) is an adequate substitute.

VI. MERCURY EMISSIONS TRADING IS INAPPROPRIATE UNDER ANY SECTION OF THE ACT BECAUSE MERCURY EMISSIONS MAY BE DEPOSITED IN CLOSE PROXIMITY TO POWER PLANTS RESULTING IN "HOT SPOTS."

Regulating toxic emissions, which have significant health impacts in the area immediately surrounding a facility by means of a cap and trade program under either section 112(n) or section 111(d), is both illegal and inappropriate. EPA's own report recognizes that buying allowances cannot address a "hot spot" "if the cap does not require sufficient reductions to minimize or prevent local impacts." See Tools of the Trade, www.epa.gov/airmarkets (Last updated, June 2003). The fact that EPA states that it will evaluate the protectiveness of the trading program after implementation of the 2010 and 2018 requirements provides almost no assurance that the issue of "hot spots" will be adequately dealt with in the near future, which will affect another generation of children.

A. A cap and trade approach is not appropriate for mercury.

EPA states in the preamble to the NPR that it "believes a trading approach will help to address" concerns about local "hot spots." 69 Fed. Reg. at 4702 (2nd column). This policy conclusion is unfounded, unsupportable and contradicted by EPA's own studies, as well as new data to be submitted by states showing that localized mercury deposition can be severe in some areas and can originate from facilities that will not likely be controlled under a trading scheme. A cap and trade approach alone will not address local hot spots of mercury. EPA must adopt a stringent plant-specific MACT in order to address localized mercury and other HAP deposition issues. Thus, even assuming that EPA were authorized to adopt a cap and trade program for mercury, as a policy matter, it should only consider doing so as a means to supplement a stringent MACT after adopting strict plant-specific controls that eliminate "hot spots," as required by the section 112 of the Clean Air Act.

B. EPA's proposed trading program does not address mercury "hot spots."

EPA's proposal to adopt a cap and trade mechanism without adoption of a plant-specific MACT is not only legally flawed under either section 112(n) or section 111(d), but it also has no policy basis in that a trading program alone totally fails to address the issue of local deposition and the risks posed to populations located near power plants. It is well documented that mercury must be controlled on a local level, and that a national cap and trade approach will not address the local issues. Mercury emissions, like SOx and NOx, are transported, but the mere fact that a pollutant is transported does not mean that a market-based cap and trade approach by itself is an adequate means to reduce health-related and other risks. Mercury is extremely toxic and potentially large percentages of total emissions from a single source deposit and accumulate close to the source. EPA

has historically acknowledged that atmospheric mercury can be transported and deposited at varying distances, resulting in impacts relatively close to the emissions source. In a recent report, EPA stated that "a source emitting primarily reactive gaseous mercury at ground level can be expected to have a relatively high fraction of its mercury emissions deposited within 50 kilometers and have significant local scale impacts." *EPA Activities On Mercury In and For the Region*, February 2004 (available on EPA website).

There is no question that plant-specific controls are needed to reduce mercury deposition on a local level. Both a recent study of the Florida Everglades (2003) and an earlier study by EPA (1998) have shown considerable "hot spots" of mercury deposition near coal burning power plants. More recent data generated by the New Hampshire Department of Environmental Services ("NHDES"), which is being submitted to this rulemaking docket by the NHDES, shows that up to 95% of the mercury emitted from local electrical generating units can be in the "reactive" form that is deposited locally. See Comments submitted by the New Hampshire Department of Environmental Services on EPA Mercury Proposal.

EPA's prediction that the largest power plants will likely sell allowances to smaller generating units under its proposed trading scheme (see 69 Fed. Reg. at 4702, 2nd column), which it reasons will address the worst hot spots, means that mid-sized and small generating units will likely purchase allowances rather than reduce mercury emissions, even though they can be responsible for high levels of localized mercury deposition. Even if EPA's assumption is correct, which it is not, this means that "hot spots" in areas other than those near the largest plants will not be addressed by this proposal.

EPA's fallback position that states can always adopt stricter mercury programs should not justify the adoption of a weak federal mercury program. The establishment of a weak federal program will make it more difficult for states to adopt stricter programs that would be applicable to utilities located in their own states . This is especially true in the context of the proposed cap and trade program under section 111(d), where states must amend their SIPs to incorporate the underlying federal mechanisms and underlying requirements. Moreover, many states are prohibited by state law from adopting environmental rules that are more stringent than the EPA rules.

The documented mercury hazard that exists close to sources is precisely why a traditional market-based cap and trade system, like that used in the acid rain program, cannot be the template for a mercury regulation applicable to power plants. While there are still problems regarding the effectiveness of the acid rain program in addressing local issues, there is a significant difference between mercury and air pollutants like SOx and NOx. SOx and NOx tend to be deposited in the environment after they are converted to particles, a process that occurs during long range transport. On the other hand, a significant percentage of mercury emissions from power plants is the type that can be deposited locally as a result of precipitation and other events. Thus, with proper safeguards, cap and trade programs can be part of an effective solution to reduce regional loads for pollutants with regional impacts, but totally miss the mark in addressing localized impacts from toxic pollutants, such as mercury.

EPA has ignored its own policy statements indicating that trading programs (whatever their value for pollutants that are more uniformly dispersed) may be inappropriate for highly toxic pollutants like mercury. For example, in a June 2003 report entitled, Tools of the Trade: A Guide to Designing and Operating a Cap and Trade Program for Pollution Control, EPA states that:

> [Cap and trade programs] set an overall target and then let "the market" determine where to make the most cost-effective reductions. In some cases, however, it does matter where an emission reduction is made. For example, some toxic emissions may have primarily local health impacts in the area immediately surrounding a facility. Allowing such a facility to buy allowances from other similar facilities in the area may not fully address the risks caused by its emissions. It may make a situation worse by causing a "hot spot" if the cap does not require sufficient reductions to minimize or prevent local impacts [and] it may be necessary, from a public health standpoint, to impose source-specific controls and limit the flexibility inherent in an emission trading program. [Emphasis added.] [Id. at p.2-2.]

Thus, EPA has expressly recognized that source-specific controls are warranted in situations where "hot spots" will occur, as is the case with mercury.

Therefore, EPA should focus on adopting a stringent MACT standard pursuant to section 112 in order to address localized impacts from mercury emissions before considering any proposal to adopt a trading program for mercury emissions.

C. The trading program as proposed does not include adequate restrictions.

Even if a cap and trade approach could be designed to avoid the "hot spots" issue, EPA has ignored its own policy guidance on how to design a cap and trade program in such a way as to address localized "hot spots." By placing few restrictions on the trading and banking of allowances, EPA has not even tried to incorporate "checks" on the potential for "hot spots."

For example, EPA has recognized that both temporal and spatial restrictions on allowances must be considered in the design of programs for trading criteria pollutants:

> If sources with high marginal abatement costs (i.e., net buyers of allowances) are congregated in specific areas, those areas are likely to experience less environmental improvements than others….

> Furthermore, such areas could experience increased emissions and harmful local environmental or human health effects, even as the larger goal of aggregate emission reductions is achieved. [Tools of the Trade, supra. p. 3-20.]

The proposed cap and trade program fails to impose adequate restrictions, such as "temporal" restrictions on use of allowances. Moreover, EPA's provision for unlimited flexibility, such as the proposed "safety valve," which would allow for unlimited purchase of allowances at a set price from future budget years (see discussion of safety valve provision in Section VII below), undermines any potential for a trading program to address "hot spots."

D. Other regulatory standards and level of required reductions are inadequate to address localized impacts.

EPA states in the NPR preamble that the cap and trade system, coupled with related Federal and State programs, will effectively address local risks. 69 Fed. Reg. at 4702, (2nd column). EPA also cites the "co-benefits" from the IAQR as a factor in addressing local impacts. Furthermore, EPA repeatedly cites the success of the acid rain program, which is the template for the mercury proposal. None of these factors adequately address local deposition of mercury.

EPA fails to recognize that the agency itself has identified certain "backstops" that exist in the acid rain program and that do not exist in the context of the mercury rule proposal. For example, EPA has cited as a key reason for the avoidance of a significant problem with "hot spots" in the acid rain program other regulatory programs (e.g., ambient air quality standards, technology and performance requirements). See Tools of the Trade, supra, "Developing a Cap and Trade Program," p. 3-21.

Putting aside the differences between SO_2 and mercury, EPA should recognize that a similar backstop was not proposed in the context of mercury. First, there are no federal ambient air quality standards for mercury. Second, even if state ambient air limits are developed, the state standards may not be effective against "reactive" mercury that creates local "hot spots" as a result of precipitation events. Third, the technology and performance requirements that could apply as a backstop would only come into play if a source-specific MACT standard for mercury is adopted. Fourth, the reductions required under the cap and trade program are not significant, so that many facilities, even large ones, can avoid installing controls.

In addition, the "co-benefits" that EPA assumes will result from the IAQR are insufficient to address localized impacts because they are not stringent enough and will not require that additional controls be installed at most facilities to address mercury. Moreover, the very controls required under the IAQR, such as Selective Catalytic Reduction, can actually increase the amount of reactive (oxidized) mercury emitted from power plants, thus exacerbating local deposition of mercury, if not caught by other controls. The only way to address this dilemma is to adopt a plant-specific MACT for mercury emissions from power plants under section 112.

EPA's reliance upon unidentified state programs to address the hot spots issue is also misplaced. "Hot spots" can be created across state lines, so that a "downwind" state is dependent upon stricter controls that may be installed by utilities located in the"upwind" state. While some states are taking a leading role in controlling mercury emissions from the power plants, the existence of such state programs and the approach proposed by EPA is neither uniform nor adequate, especially in light of the fact that mercury can be transported across state lines.

In addition, some state legislation relies upon the adoption of a strict federal standard under section 112 of the Clean Air Act as a means to establish state limits on mercury emissions from local power plants. See, *e.g.*, New Hampshire Revised Statutes Annotated Chapter 125-O:3, c (annual mercury cap to be based upon EPA's MACT standard for utility boilers). Therefore, EPA's proposal to adopt a trading program, rather than a strict MACT standard under section 112, will likely result in less, not more, state control of mercury emissions.

E. EPA has ignored environmental justice considerations.

In light of the existence of mercury "hot spots" near coal-fired power plants and EPA's proposal to use an incentive-based approach to control mercury emissions from coal-fired EGU's, EPA should analyze and consider whether environmental justice issues exist before taking final action on the NPR and SNPR. This is especially needed under the proposed cap and trade approach because there is the potential, based on the evidence described below, that the trading program could have a disproportionate effect on minority and low-income populations located near coal-fired power plants.

Mercury as a contaminant in fish has already been shown to be a pollutant that produces a disproportionate impact on minority and low-income populations. The USEPA and the Minnesota Department of Health addressed this issue in May 2001 at a conference entitled, "National Risk Communication Conference, Effectively Communicating Health Risks from Fish Contaminants." The conference concluded that effective risk communication about fish contaminants is necessary to reach at-risk and hard-to-reach populations. At-risk populations include people exposed and susceptible to contaminants found in fish. Hard-to-reach populations include people who may not hear, understand, or be receptive of risk communication messages concerning fish contaminants.

Many federal and state advisories do not reach or affect the fish consumption habits of many members of at-risk and hard-to-reach populations. While risk communication in the form of advisories is vitally important to enable consumers to make informed decisions about the fish they eat, many anglers do not hear, understand or heed the message. In particular, urban anglers, subsistence fishermen, and people from non-English speaking cultures with a strong fishing heritage, often disregard, do not understand, or are unaware of the consumer advisories and continue to ingest contaminated fish despite the advisories.*

Studies suggest that at-risk and hard-to-reach populations include minority and low-income anglers who are more likely to consume the fish they catch, and are frequently unaware of fish consumption advisories.** In a New York State Department of Health report, results of an angler survey indicated that sixty-six percent of low-income populations are not aware of the advisories.*** Anglers share their food with women and children, who are considered at-risk populations due to the health risks associated with exposure to mercury in fish. The greatest concerns are the health risks particularly of women of childbearing age and children under age 15.

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* National Risk Communication Conference, 2001.

** Barclay, B., 1993. Hudson River Angler Survey. Hudson River Sloop Clearwater, Inc., 1993; NYSDOH. 2000. New York State Department of Health. Health Consultation: 1996 Survey of Hudson River Anglers, Hudson Falls to Tappan Zee Bridge at Tarrytown, New York. Final Report. CERCLIS No. NYD980763841. February 10, 2000; Burger, J. 1998. Fishing and Risk Along the Savannah River: Possible Intervention. Journal of Toxicology and Environmental Health, Part A. 55:405-419.

*** NYSDOH. 2000. New York State Department of Health. Health Consultation: 1996 Survey of Hudson River Anglers, Hudson Falls to Tappan Zee Bridge at Tarrytown, New York. Final Report. CERCLIS No. NYD980763841. February 10, 2000

Under Executive Order 12898 entitled "Federal Actions to Address Environmental Justice In Minority Populations and Low-Income Populations," (February 11, 1994) (hereinafter "Order"), EPA and other federal agencies are directed to take certain steps to ensure environmental protection for all communities. Under the Order, EPA must take steps to determine whether its programs, policies and activities will have disproportionately high adverse human health and environmental effects on minority and low income populations, and whether these communities have access to public information on, and an opportunity for public participation in, matters relating to human health or the environment. In light of the evidence that anglers who are unaware of local fish consumption advisories are disproportionately minority and low income, and that these same populations are more likely to consume the fish they catch, there appear to be environmental justice implications resulting from the existence of mercury "hot spots." EPA's proposal identifies no steps that have been taken to assess whether these environmental justice implications exist.

In addition, the Order requires federal agencies to collect and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence and to communicate to the public the risks of those consumption patterns. See Order, Section 4-4. Agencies must also "consider such guidance in developing their policies and rules." See Order, Section 4-402. EPA has adhered to the Order in general terms by issuing health advisories on fish consumption in conjunction with other federal agencies, but has failed to take its own advisories into account in development of the mercury proposal. EPA should identify and analyze the issue of disproportionate public health risk to populations that subsist on mercury-contaminated fish and shellfish in the context of the trading proposal, as required under the Order.

VII. THERE IS NO LEGAL OR POLICY BASIS FOR ESTABLISHING A "SAFETY VALVE."

In the January 30 and March 16, 2004 notices, EPA proposed a "safety valve" provision to be incorporated in the cap and trade scheme, which would set a maximum cost that purchasers must pay for mercury emissions allowances. In particular, EPA proposed a price of $2,187.50 for each mercury allowance (covering one ounce), and proposed that sources may purchase allowances from subsequent year budgets at the "safety valve" price at any time. The permitting authority would then deduct corresponding allowances from future allowance budgets. EPA requested comment on the need for a "safety valve" and the viability of EPA's approach. See 69 Fed. Reg. at 4703; 69 Fed. Reg. 12398, 12410 (March 16, 2004).

EPA should withdraw the proposal to establish a "safety valve" to address cost uncertainties. There is absolutely no authority in the CAA that would allow EPA to establish such a provision. In fact, such a provision contravenes the technology-forcing aspect of the CAA. Even if such authority existed, EPA has presented no legal or technical basis for proposing the price of $2,187.50 as a "safety valve" price. The provision is also unnecessary in the context of a market-based program, and would effectively defeat the underlying purpose of the proposed cap and trade program, which is to use market incentives to achieve timely reductions.

The cap and trade proposal is, in itself, ineffective because it would allow facilities to purchase and to bank unlimited allowances of mercury, a highly toxic, persistent and bioaccumulative HAP, and thereby defer actual reductions until some future date. The proposed "safety valve" provision exacerbates the ineffectiveness of the trading program because it places no restrictions on the purchase of future allowances, thereby creating a built-in incentive for facilities

to purchase future allowances at the proposed "safety valve" price, rather than to install controls, which may be more expensive than the "safety valve" price.

A. EPA lacks both authority and a policy basis for adopting a "safety valve."

EPA lacks the authority under sections 111 and 112 of the CAA to implement the proposed cap and trade program for mercury. It also lacks the authority under these or any other section of the CAA to address "the uncertainty associated with the cost of mercury control" through a "safety valve" provision. 69 Fed. Reg. at 12410 (1st column). EPA cites no authority for its proposed "safety valve" because no such authority exists. In fact, the CAA's technology-forcing provisions, like those that apply to HAPs under section 112, do not accommodate "escape hatches" like the "safety valve," which essentially allows industry to avoid having to install control technology.

EPA cites no reason for adopting a "safety valve" other than to address cost uncertainties. This makes no sense in the context of a trading program. By definition, market incentives drive the price of controls under a trading program, not artificially created price controls like the safety valve provision. In addition, EPA has already taken the costs of controlling mercury emissions into account in proposing the cap and trade program. Therefore, the safety valve is duplicative and an unnecessary and counterproductive addition to the proposal.

Moreover, there is no basis for EPA's "capping" the price of a mercury allowance at $2, 187.50. EPA has presented no analysis to support this number and makes no showing that establishing this price cap will still achieve timely reductions. Nor does EPA provide an estimate of the societal costs of mercury emitted to the air. The costs of contaminated fish, lost wildlife, and a neurologically diminished population would likely significantly exceed EPA's arbitrary cost-based exemption. At a minimum, EPA should provide its basis for proposing this allowance price,

demonstrate how it will ensure continued improvement in control of mercury emissions, and how it compares to the environmental and public health costs of mercury.

B. The safety valve provides incentive to defer emission reductions.

The state commenters disagree with EPA's summary conclusion that sources will not be likely to purchase allowances from subsequent year budgets unless the market allowance price exceeds the safety valve price. See 69 Fed. Reg. at 12410 (1st column). While there is no need for a safety valve in the context of a cap and trade program, where market incentives drive the price and distribution of controls, its existence creates a built-in incentive to defer actual emissions reductions by purchasing future allowances at the "safety valve" price. Facilities can essentially "insure" against possible future price increases by purchasing allowances from future budgets now and banking them for future use or sale when allowance prices increase. The fact that EPA proposes absolutely no restrictions on such purchases guarantees that this will be the case. Also, because EPA does not propose restrictions on retiring of banked allowances, this "gaming" of the system can continue unabated and indefinitely.

This result is unacceptable when it comes to controlling mercury emissions. Mercury is bioaccumulative, so that present controls are more valuable than future controls. EPA's approach would encourage facilities to purchase and accumulate allowances in order to defer the costs of installing controls. Thus, the "safety valve" is counter to the very incentives that EPA proposes to create through adoption of a cap and trade program.

While EPA's proposal states that the integrity of the caps is ensured because future year caps are reduced by the borrowed amount, this begs the question of how valuable present versus future controls are to the public health and welfare. EPA totally ignores the fact that, once mercury enters

the environment, it remains available for bioaccumulation for thousands of years. EPA also ignores the issue of "hot spots," which under a "safety valve" approach, can exacerbate continuation of localized mercury deposition.

In light of the foregoing, EPA should withdraw the "safety valve" proposal.

VIII. THE ADVISORY GROUP PROCESS CONFIRMS THAT EPA CONCEDED THAT: (A) IT WAS LEGALLY REQUIRED TO ADOPT A MACT STANDARD UNDER SECTION 112; (B) IT HAD NO AUTHORITY TO ESTABLISH A CAP AND TRADE PROGRAM TO SET A MACT FLOOR FOR MERCURY; AND (C) IT NEEDED TO UNDERTAKE ADDITIONAL MODELING THAT APPARENTLY WAS NEVER PERFORMED.

The comments provided herein highlight the specific technical and legal flaws surrounding the proposal to regulate mercury and other HAPs emitted from power plants. Many of these same issues were addressed by the advisory group that EPA formed in 2001 to assist it in the development of this rulemaking. Of note, during the advisory group process, EPA even conceded that it was legally required to adopt a MACT standard for power plants under section 112 of the CAA, and that it had no authority to establish a cap and trade program in setting a MACT floor for mercury. In addition, the advisory group process illustrates that EPA expressly agreed that additional modeling needed to be performed in order complete the rulemaking, but that EPA did not complete this promised modeling. The advisory group process raises serious concerns about EPA's development of the proposed rule. The history of this process will therefore be reviewed in some detail.

Even before EPA made the "appropriate and necessary" finding, the agency signaled that it was interested in creating a process – in addition to notice and comment rulemaking – that would provide stakeholders with direct input into the agency's setting of the MACT standard. Following up on this stated goal, EPA on March 12, 2001, held three separate stakeholder meetings with

representatives from industry, environmental advocacy groups, and various state, local, and tribal parties. After these meetings, EPA determined that the most appropriate way of establishing a formal stakeholder process was to create a separate advisory body that would serve under a subcommittee of the existing Clean Air Act Advisory Committee (CAAAC), specifically, CAAAC's Subcommittee for the Permits/New Source Reviews/Toxics. CAAAC itself is a standing committee created by EPA under the Federal Advisory Committee Act. The new advisory group that EPA created under CAAAC's aegis was named the Working Group for the Utility MACT (hereafter, "Working Group").

EPA appointed 14 original members of the Working Group (many of whom also served on the CAAAC itself). These representatives came from a broad array of parties who had a direct interest in the MACT standard that would be set, including environmental advocacy groups, state, local, and tribal entities, and private parties (mostly power generators and those that supply or service the industry). An additional industry representative was added later. Whatever their particular background or perspective, all of the Working Group members brought an exceptional amount of expertise, interest, and energy to the process. EPA appointed two co-chairs to the Working Group, Sally Shaver from EPA's Office of Air and Radiation, and John A. Paul, Supervisor of the Regional Air Pollution Control Agency of Dayton, Ohio. A full list of the Working Group members is included in Appendix A of the Working Group's October 2002 report, http://www.epa.gov/ttn/atw/combust/utiltox/wgfinalreport10_02.pdf.

The Working Group met for the first time on August 1, 2001. At that meeting, Co-Chair Shaver issued a formal charge to the Working Group as follows:

> Provide input to the EPA regarding Federal MACT regulations for coal-fired electric utility steam generating units that will maximize environmental and public health benefits in a flexible framework at a reasonable cost of compliance and within the constraints of the Clean Air Act. [See http://www.epa.gov/ttn/atw/combust/utiltox/81pres1.pdf.]

In discussing EPA's expectations about the work of the Working Group, Ms. Shaver urged the group to "Think outside the box…but inside the CAA." *Id.*

Neither at the inception of this process, nor at any point during it, did EPA request that the Working Group examine whether mercury emissions from power plants should be regulated instead under a CAA section other than section 112, or whether emissions trading could be employed to meet a MACT floor standard. To the contrary, EPA made it clear that: a) the Working Group was established to advise EPA on setting a MACT standard, not to reconsider whether the "appropriate and necessary" finding should have been made, and b) using emissions trading to meet a MACT floor standard was flatly prohibited by the CAA. See, http://www.epa.gov/ttn/atw/combust/utiltox/81pres1.pdf. Apparently, EPA considered these particular "outside the box" ideas as not lying "inside the CAA."

The Working Group expended considerable effort over the next year-and-a-half. For example, the full group was formally convened on 14 separate occasions: August 1, 2001, November 5, 2001, December 18, 2001, February 5, 2002, March 4-5, 2002, April 3, 2002, May 13, 2002, June 3, 2002, July 9, 2002, August 8, 2002, September 9, 2002, October 17, 2002, October 30, 2002, and March 4, 2003 (in addition to a workshop the group held on May 30, 2002). Although the original hope was that the Working Group would reach a consensus on the MACT standard, the members fairly quickly realized that this goal was unrealistic. As a result, the mission of the Working Group

evolved into identifying the key policy issues presented, developing the stakeholder positions and arguments on these issues, and reaching as much agreement as possible.

In October of 2002, the Working Group transmitted to the CAAAC and to EPA a report that lays out its recommendations for the MACT standard. See Recommendations for the Utility Air Toxics MACT, Final Working Group Report, October 2002. http://www.epa.gov/ttn/atw/combust/utiltox/wgfinalreport10_02.pdf. That report documents the enormous effort that the Working Group had made in defining the policy issues presented and in setting forth the substance of the continuing debates on these issues. Although substantial disagreements remained, the stakeholders had reached considerable agreement on many things, including identifying the issues. In addition, important subsets of the Working Group were able to reach broad agreement on many of the key substantive issues. For example, a memo to the CAAAC dated October 30, 2002, from The Clean Energy Group, Environmental Stakeholders, NESCAUM, and the New Jersey Department of Environmental Protection documents the substantial areas of agreement reached by this diverse group of stakeholders. See, http://www.epa.gov/ttn/atw/combust/utiltox/caaacmactmemo.doc. As the Working Group's Report itself confirms, the Working Group never considered relying on emissions trading to meet the MACT floor, or relying on sections of the Act other than section 112. This was consistent with its charge and with the position that EPA took throughout the process.

Despite the fact that the October 2002 report's subtitle characterized the report as "final," the Working Group did not consider its job completed. The group formally recognized that certain topics needed "further investigation," and one of its key recommendations was that EPA perform additional modeling of the impact of the various proposals on the electricity generating sector,

including using a proprietary model known as the Integrated Planning Model (IPM). By this point in the Working Group's deliberations, the need for EPA to do additional IPM modeling runs had become a key issue facing the group. Although EPA had done some initial IPM runs, the agency recognized the need to do additional runs, and Working Group members strongly concurred. Among other purposes, the additional runs would test the sensitivity of the model's predictions to the input assumptions used. Several Working Group members proposed specific inputs for these runs. In particular, members of the Working Group who represented state and environmental advocacy interests believed that a 90% reduction in power plant mercury emissions could be achieved in a cost effective manner, and that additional IPM runs would confirm this. In order to get more accurate IPM modeling results, EPA itself offered to "hardwire" into the IPM modeling known information about which plants were going to install Selective Catalytic Reduction technology (instead of relying on IPM's built-in assumptions).

The full CAAAC supported the Working Group's recommendation about having additional IPM runs performed, and the idea was expressly endorsed by Assistant Administrator Jeffrey Holmstead at the October 30, 2002 meeting where the Working Group presented its Report. See Attachment B. (November 3, 2003 letter from Working Group Co-Chair John A. Paul to Jeffrey Holmstead). EPA staff fully agreed that the requested IPM runs would provide important new information, and they promised the Working Group that these runs would be undertaken and the information provided to the Working Group for its review. In this fashion, the Working Group continued its job not only with EPA's full blessing, but at its request.

The Working Group formally met on March 4, 2003, but EPA did not present the additional modeling at that time. Instead, EPA stated that it would present the modeling at the next Working

Group meeting scheduled for April 15, 2003. On April 1st, however, EPA postponed the meeting and notified the members of the Working Group as follows:

> Unfortunately, we will not be able to complete the model runs in time for the April 15th meeting. Therefore, we will not be holding the meeting on that date. I regret any inconvenience that this may cause. We will get back to you regarding a future meeting.

See Attachment C. (April 1, 2003 e-mail from Sally Shaver to Working Group members).

EPA did not in fact re-schedule the April 15th meeting. Through reading an October 2003 article in the *Atlanta Journal-Constitution*, John Paul, the Working Group's Co-Chairman, learned that EPA officials were taking the public position that the Working Group had been "disbanded" because it had completed its work. In response, John Paul wrote a letter to EPA, reiterating the need for the IPM runs. See Attachment B. Specifically, he stated:

> On behalf of the working group, and as the working group co-chair, I request that EPA conduct the requested IPM runs and provide the results to the working group for discussion. Contrary to the statement in the Atlanta Journal-Constitution, the working group has not disbanded nor completed its work. Once EPA has conducted the IPM runs, and the working group has reviewed and discussed the results, then we will have completed our work.

In its response to Mr. Paul's letter, EPA stated that it had "relied on all available ambient data and technical/economic/modeling analyses," however, it did not explain why the additional requested IPM modeling runs had not been provided, or why the Working Group had been "disbanded." See Attachment D (December 23, 2003 letter from Stephen D. Page, Director EPA's Air Quality Planning & Standards – although signed by Henry Thomas – to John A. Paul). Citing several anonymous EPA officials as its source, the *Los Angeles Times* subsequently reported that the additional modeling was not undertaken because -- after discussing the matter with White House

officials -- political appointees at EPA ordered the professional staff not to undertake it, despite the fact that they had determined that it was necessary to evaluate the issues presented. See Attachment E. In a subsequent story in *Greenwire*, Assistant Administrator Jeffrey Holmstead appears to confirm on the record that this occurred. See Attachment F.*

Two important conclusions are evident from this history. First, at no point during the entire Working Group process did EPA provide any hint that it believed that it could comply with its duties under section 112 of the Clean Air Act other than by setting a MACT standard pursuant to that section. Second and most important, EPA put out its proposed mercury regulations apparently without performing the modeling that the members of the Working Group and EPA's professional staff considered critical to understanding the issues presented.

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* On March 19, 2004, the Massachusetts Office of the Attorney General (OAG) has submitted a Freedom of Information request for: all records relating to the use of the Integrated Planning Model (IPM) in connection with the impact on the electricity generating and fossil fuel industries of proposed EPA standards for the emission of mercury from power plants, including but not limited to any communications about whether to undertake IPM modeling runs, and any discussions about the actual or anticipated results of such runs, and the results of any modeling runs actually performed (other than those results already disclosed to the Working Group for the Utility MACT formed under the Clean Air Act Advisory Committee Subcommittee for the Permits/New Source Reviews/Toxics). In the response that the Massachusetts OAG received from EPA on June 21, 2004, EPA withheld, as allegedly exempt from FOIA's requirements, documents in three general categories: (1) EPA staff notes; (2) analytical documents; and (3) EPA internal correspondence. The state commenters reserve the right to supplement these comments based on documents obtained through an appeal of EPA's FOIA decision.

IX. EPA IS REQUIRED TO PROMULGATE AN APPROPRIATE MACT STANDARD FOR ALL POWER PLANT HAPS EMITTED IN SIGNIFICANT AMOUNTS FROM COAL- AND OIL-FIRED EGUS.

Based on the December 2000 regulatory finding, in which EPA found that it was "appropriate and necessary" to regulate EGUs under section 112, EPA added coal- and oil-fired EGUs to the list of source categories under section 112(c). See 65 Fed. Reg. at 79826 (1st column); See also 67 Fed. Reg. 6521, 6522 (February 12, 2002). As a listed source category, the CAA requires EPA to promulgate emission standards for all HAPs emitted in significant amounts. See 42 U.S.C.A. §7412(c)(2); see also National Lime Association v. EPA, supra, 233 F.3d at 634. The CAA does not authorize EPA to pick and choose which HAPs it will regulate. Ibid.

In light of the listing of EGUs as a source category, and in addition to its proposal to regulate mercury and nickel emissions from power plants, EPA must also promulgate appropriate emission standards for other power plant HAPs that are emitted in significant amounts from this source category. Although EPA identified mercury emitted by EGUs as the "HAP of greatest concern," 65 Fed. Reg. at 79827 (1st column), there are many other HAPs emitted in significant amounts from this source category that result in adverse human health or environmental effects.

For example, in the December 2000 regulatory finding, EPA concluded that non-mercury HAPs, including arsenic, chromium, nickel and cadmium are "of potential concern for carcinogenic effects[,]" and that dioxin, hydrogen chloride and hydrogen fluoride are three additional HAPs that are "of potential concern and may be evaluated further during the regulatory development process." 65 Fed. Reg. at 79827 (3rd column). Yet, in the preamble to the proposed mercury rule, EPA stated, without explanation, that, although it intends to continue to study these pollutants, these pollutants do not pose any public health hazards that warrant regulation at this time. 69 Fed. Reg. at 4688 (3rd

column). EPA went on to say that even if it found that these non-mercury, non-nickel HAPs do warrant regulation, they could be adequately regulated under section 111. 69 Fed. Reg. at 4689 (1st column). Thus, EPA proposed that it is both inappropriate and unnecessary to regulate non-mercury, non-nickel HAP emissions from coal- and oil-fired EGUs under section 112.

EPA's decision not to regulate the other HAPs emitted by coal- and oil-fired EGUs completely disregards the mandatory requirements of section 112, which are triggered by EPA's scientifically supported decision to list EGUs as a source category. The only way for EPA to legally avoid this obligation is to delist EGUs as a source category under section 112(b)(9)(B)(ii), which for the reasons set forth in Section III. C and D above, EPA has failed to do.

In fact, in prior rulemakings, EPA has followed the requirements of section 112 and has regulated all HAPs emitted in significant amounts from a source category. Most recently, EPA promulgated emission standards under section 112(d) for HAP emissions from the industrial, commercial, institutional boilers and process heaters source category.* See National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, Institutional Boilers and Process Heaters or "IB MACT rule," OAR-2002-0058 (February 26, 2004). Among the HAPs regulated in that rule are: arsenic, cadmium, chromium, hydrogen chloride, hydrogen fluoride and various organic HAPs, which are the same HAPs that EPA concluded in the preamble to the mercury proposal posed no public health hazard.

In its adoption of the IB MACT rule, EPA stated that:

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* The state commenters are not commenting on the merits of the specific emission standards adopted, or any other specific provision of that rule.

> Exposure to high levels of these HAPs is associated with a variety of adverse health effects. These adverse health effects include chronic health disorders (e.g., irritation of the lung, skin, and mucus membranes, effects on the central nervous system, and damage to the kidneys), and acute health disorders (e.g., lung irritation and congestion, alimentary effects such as nausea and vomiting, and effects on the kidney and central nervous system). Id. at p. 14.

Although EPA concluded in the preamble to its mercury proposal that there were uncertainties "so great that regulation of such [non-mercury and non-nickel] pollutants do not pose a hazard to public health that warrants regulation," it concluded in the IB MACT rule that arsenic is a "human carcinogen," cadmium is a "probable human carcinogen" and chromium is a "human carcinogen." Id. at pp. 16, 17, 18. EPA also concluded in the IB MACT rule that chronic effects occur as a result of exposure to hydrogen chloride and hydrogen fluoride. Id. at pp. 19-20. Of note, the emissions of these non-mercury, non-nickel HAPs are much larger from coal- and oil-fired EGUs than from industrial, commercial, and institutional boilers and process heaters.

In light of the scientifically accepted chronic and acute health effects caused by exposure to non-mercury, non-nickel HAPs emitted by power plants, EPA's own statements and conclusions in the IB MACT rule, and the requirements of section 112 of the CAA, EPA should revise its proposed determination that the regulation of these HAPs is both inappropriate and unnecessary, and should initiate rulemaking to adopt appropriate emission standards under section 112(d) for these and any other HAPs emitted by coal- and oil-fired EGUs in significant amounts. However, because of the health and environmental impacts of mercury pollution already recognized by EPA in its December 2000 regulatory finding and elsewhere, EPA should proceed with the revisions to the proposed rule addressing mercury and nickel emissions from EGUs expeditiously and in a manner consistent with

the comments set forth herein. EPA should not postpone the regulation of mercury and nickel pending its review of the other HAPs emitted from EGUs.

X. CONCLUSION

For all of the reasons set forth in these comments, EPA should withdraw the current proposal, and should expeditiously promulgate an appropriate plant-specific MACT standard that regulates mercury and nickel emitted by power plants, as required by the CAA and EPA's December 2000 finding. In addition, EPA should initiate rulemaking to adopt plant-specific MACT standards for all other HAPs emitted in significant amounts from power plants.

ATTACHMENT A

Demonstrating that EPA's variability analysis for the MACT Floor is error-filled
(in support of subsection IV.B.2.a.iv. of our comments on proposed Section 112(d))

We show in this Attachment that EPA's calculation of MACT floor values for existing sources is erroneous. First, we reiterate that variability cannot be included in the MACT floor calculation if EPA has already chosen to include variability in a rolling-average compliance method. This would be disallowed as "double-counting," as discussed above in subsection IV.B.2.a.i of our comments. Assuming that EPA adopts a rolling-average compliance method, and assuming arguendo that EPA's subcategorization is allowable, EPA must use a *simple average* of the best-performing sources as the MACT floor in each subcategory:

Bituminous	0.118 lb/TBtu
Subbituminous	0.738 lb/TBtu
Lignite	5.032 lb/TBtu
Coal refuse	0.088 lb/TBtu
IGCC	5.403 lb/TBtu

These are the only MACT floor values that can lawfully be adopted without "double-counting," based on the supporting information that EPA has provided in this rulemaking.[1]

EPA claims otherwise and argues that variability must be taken into account. Specifically, EPA provides *cumulative frequency distributions* that are said to represent the variable mercury emissions of the best-performing plants for which EPA has data (4 plants in the bituminous subcategory, 4 in the subbituminous subcategory, 5 in the lignite subcategory, 2 in the coal refuse subcategory, and 2 in the IGCC subcategory).[2] EPA employs its cumulative frequency distributions, allegedly representative of the best-performing plants, to calculate the following MACT values[3] which we will demonstrate are erroneous:

Bituminous	2.0 lb/TBtu
Subbituminous	5.8 lb/TBtu
Lignite	9.2 lb/TBtu
Coal refuse	0.38 lb/TBtu
IGCC	19 lb/TBtu

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[1]For supporting information, see EPA's *Federal Register* notice (69 FR 4652, January 30, 2004) and the EPA docket identified therein. For EPA's simple test averages, see 69 FR 4673.

[2]See the cumulative frequency distributions for the various best-performing sources in the Nov. 2003 Maxwell Memorandum, Docket A-92-55, Entry II-B-2. Four of those cumulative frequency distributions, said to represent the four best-performing bituminous plants for which EPA has data, are reproduced for the purpose of illustration as Figs. 1-4 in this Attachment.

[3]69 FR 4673 (January 30, 2004).

EPA's error is at least twofold. We show here that 1) even if we assume that EPA's cumulative frequency distributions are correct, EPA has incorrectly derived its MACT floor values, and 2) since EPA's cumulative frequency distributions are contradicted by the test data in the bituminous and subbituminous subcategories, these EPA distributions cannot be correct. The simple average of the best-performing sources must therefore be adopted as the MACT floor in at least two, and perhaps all, of the subcategories, in accordance with Section 112 of the Clean Air Act. Given the "double-counting" issue, EPA has presented no reasonable alternative to adopting the simple average.

Legal background

Subsections 112(d)(3)(A) and (B) of the Clean Air Act require that the MACT floor for existing sources shall not be less stringent than either "(A) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information)...in the category or subcategory for categories or subcategories with 30 or more sources" or "(B) the average emission limitation achieved by the best performing 5 sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources."

Recent case law has helped define the latitude of these requirements. In *Northeast Maryland*, the court emphasized the need to rely on actual testing data and said that, "Even assuming actual testing data should not be used for setting MACT floors, EPA must still justify selecting state permit and uncontrolled default levels as alternative bases for the floors."[4] Courts have also allowed some degree of variability to be taken into account in setting MACT floor values. For example, courts have permitted EPA to account for the performance of the best-performing sources under the "most adverse circumstances which can reasonably be expected to recur"[5] or "under the worst reasonably foreseeable circumstances."[6]

In any event, the Clean Air Act requires the MACT floor to be at least as stringent as a measured *average* of emissions values. To the extent that the law allows *variability* to be taken into account, the variability must apply to this measurement-based average.

Assuming its distributions are correct, EPA has incorrectly derived its MACT floor values

We will show later that the probabilistic frequency distributions provided by EPA for the best-performing plants are not correct, and do not satisfy the requirements of *Northeast Maryland*, at least not for the bituminous and subbituminous subcategories. However, to illustrate EPA's

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[4]Northeast Maryland Waste Disposal Authority v. EPA (358 F. 3d 936, February 24, 2004).

[5]64 FR 31915 (June 14, 1999), citing Sierra Club v. EPA, 167 F. 3d 658 (March 2, 1999).

[6]Cement Kiln Recycling Coalition v. EPA, 255 F. 3d 855 (July 14, 2001), citing Sierra Club v. EPA, 167 F. 3d 658 (March 2, 1999).

improper statistical derivation of MACT floor values, we will assume temporarily that these distributions are correct.

Assuming arguendo that variability is allowed to be incorporated in both the MACT floor calculation and the compliance method, that EPA's subcategorization is allowable, and that the cumulative frequency distributions provided by EPA for the best-performing plants in each subcategory are correct, we show here that the mercury MACT floor for existing sources in each of EPA's subcategories must be set at or below the following values:

Bituminous	0.7 lb/TBtu [*95th percentile*] or 1.0 lb/TBtu [*97.5th percentile*]
Subbituminous	2.2 lb/TBtu [*95th percentile*] or 2.4 lb/TBtu [*97.5th percentile*]
Lignite	6.4 lb/TBtu [*95th percentile*] or 6.7 lb/TBtu [*97.5th percentile*]
Coal refuse	0.12 lb/TBtu [*95th percentile*] or 0.13 lb/TBtu [*97.5th percentile*]
IGCC	6.4 lb/TBtu [*95th percentile*] or 7.2 lb/TBtu [*97.5th percentile*]

These values represent the 95th and 97.5th percentile values for the average emissions from the best-performing plants for which EPA has data. The 95th percentile values provide greater protection. Average emissions from the best-performing plants would exceed these 95th percentile values only 5% of the time, or less frequently than 5% of the time if measured on a rolling-average basis. A lower percentile than 95, which would give less variability allowance to the industry but more protection to human health and the environment, may be more appropriate, in which case the MACT floor values would be lower than those shown above.

In contrast to this approach, EPA has erroneously calculated higher MACT floor values from its distributions (2.0 lb/TBtu for bituminous, 5.8 lb/TBtu for subbituminous, etc.), as listed above. The main problem is that EPA has not looked at the variability of the *average* emissions from the best-performing plants. By neglecting the behavior of the average, EPA has strayed from the legal mandate of the Clean Air Act.

EPA's erroneous method, which came from industry consultants who developed and promoted it,[7] is illustrated here for the bituminous subcategory but is similar for all five subcategories. Figures 1-4 show the four cumulative frequency distributions for the best-performing bituminous sources, as copied from the EPA docket.[8] These four independent probabilistic distributions, provided by EPA, provide the starting-point for EPA's incorrect calculations and also for our own correct approach. What EPA needs to do is *combine these four distributions into a single distribution* that represents the behavior of the average. This is what the law requires. EPA could then set its emissions limit at an appropriate percentile on this combined distribution.

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[7]See, for example, the Nov. 2003 Maxwell Memorandum, Docket A-92-55, Entry II-B-2, in combination with *Multivariable Method to Estimate the Mercury Emissions of the Best-Performing Coal-Fired Utility Units Under the Most Adverse Circumstances Which Can Reasonably Be Expected to Recur*, prepared March 4, 2003 for West Associates by ENSR Corporation.

[8]Maxwell Memorandum, *op. cit.*

Instead, EPA erroneously takes the 97.5th percentile emissions value from *each* of the four distributions, then treats these 97.5th percentile emissions values as members of a new distribution that purportedly represents the entire group of 4 best-performing bituminous plants. By taking the mean of this new distribution, but without explaining clearly what it is doing, EPA calculates an emissions limit that has no defensible rationale and is much too high. EPA's calculated limit corresponds to an exceedingly improbable combination of conditions, such that the average emissions from the 4 best-performing bituminous plants would be below the calculated limit more than 99.999% of the time, and would exceed this value less than 0.001% of the time.[9] This erroneous procedure is an abuse of the "reasonably expected to recur" principle and has produced an excessively lax MACT floor value for mercury emissions in the bituminous subcategory. The same can be shown for the other subcategories.[10]

Recall that Congress, in passing the Clean Air Act, set a requirement that the MACT floor must be no less stringent than the *average* emissions measured at a certain number of best-performing plants. By definition, an average lies between the highest and lowest values. Thus, during the test period, some of the emissions from the best-performing plants must have been *higher* than the average that will be adopted as the MACT floor, while some of the emissions must have been *lower*. The Clean Air Act contains no provision that would "grandfather" these best-performing plants. Without further guidance, we must infer that the MACT floor will be set lower than the measured mercury emissions of some of the best-performing plants, and that the best-performing plants will exceed the new MACT floor some percentage of the time, assuming they continue to operate as usual. Case law recognizes that emissions from the best-performing plants may vary somewhat over time, such that the ongoing emissions from a given plant are sometimes higher and sometimes lower than the average measured during the test period, and may allow EPA to set a MACT floor higher than the measured average by applying the "reasonably expected to recur" principle. However, even though this logic may allow the MACT floor to be set at a level somewhat less burdensome to industry and somewhat less protective to public health, it must still be tied to the average emissions from the best-performing plants under conditions that are "reasonably expected to recur." For example, a MACT floor might be set at a level that could be achieved 80% or 90% or 95% or 97.5% of the time by the average of the best-performing plants.

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[9]EPA actually takes two separate steps, both of which are erroneous, to calculate its MACT floor values from its cumulative frequency distributions. The first step, discussed above, takes the mean of the 97.5th percentile values from the individual distributions, yielding a value of 1.0866 lb/TBtu in the bituminous subcategory. The second step, addressed in the main text of our comments, revises this value upward to the proposed MACT floor of 2.0 lb/TBtu for existing bituminous sources. This second step is improper because it attempts to account for additional best-performing sources for which EPA has no data.

[10]The same percentages apply to subbituminous plants, such that average emissions from the 4 best-performing plants would be below EPA's calculated limit more than 99.999% of the time, and would exceed this value less than 0.001% of the time. For lignite units, the average emissions from the 5 best-performing units would be below the calculated limit more than 99.99996% of the time, and would exceed this value less than 0.00004% of the time. The percentages for the coal-refuse and IGCC plants are less dramatic but still problematic.

Setting the MACT floors at one of these levels might be viewed as a reasonable public policy choice. However, setting a MACT floor at a level that can be achieved more than 99.999% of the time by the average of the best-performing plants, as EPA has done in the bituminous, subbituminous, and lignite subcategories, is not reasonable; it violates the "reasonably expected to recur" principle and allows excessive emissions of a highly toxic substance.

The above criticism of EPA's method is not uniquely tied to EPA's cumulative frequency distributions. For any four frequency distributions that are independent, choosing the 97.5th percentile in each individual distribution is a very different procedure from choosing the 97.5th percentile in the combined distribution that represents the behavior of the average. Exceeding the 97.5th percentile in each of four independent emissions distributions is equivalent to exceeding the 99.99996th percentile in the combined distribution. In each individual distribution, if an emission limit is set at the 97.5th percentile, emissions would exceed this limit only 1/40th of the time and would remain below this limit 39/40ths of the time. However, simultaneous exceedance of 97.5th percentile limits in all four distributions would occur only 1/2560000th of the time, while the emission limits would *not* be exceeded simultaneously 2559999/2560000ths of the time. In practical terms, high emissions from one best-performing plant frequently occur at times when emissions at the other three best-performing plants are medium or low, so the average emissions tend not to be dominated by any one plant. This type of generalization becomes more complicated when the four distributions are irregular and differ from one another, but the fact remains that a given percentile on the combined distribution is vastly different from the same percentile on each individual distribution.

In calculating the MACT floor value from four independent emissions distributions, the correct approach requires the creation of a new "combined" distribution that represents the average emissions from the best-performing plants. This can be accomplished in various ways that will all generate essentially the same distribution in any given subcategory. One way would be to create a joint distribution from the four independent emissions distributions, treating the latter as either discrete or continuous distributions,[11] then generate the new "combined" distribution as a function of the four independent emissions distributions. Alternatively, a "permutation" method can be used. In this method, each of the four distributions either is considered discrete (this provides the discrete, equiprobable emissions values that EPA generated from each coal delivery) or is considered quasi-continuous and can then be discretized into equiprobable intervals, yielding in either case a series of discrete, equiprobable emissions values for each plant. These values can then be averaged by computer for all possible combinations within each subcategory. The end result of any of these methods will be a distribution that represents the *average* emissions from the four best-performing sources in the subcategory. The distribution will show the percent of time (or probability) that the *average* will fall in various ranges that differ from the mean test value.

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[11]EPA treats these cumulative frequency distributions as either discrete or continuous. EPA generated the distributions as discrete points, each representing a calculated emissions value for a discrete coal delivery which was assumed equiprobable for the given plant, but EPA then graphed them as continuous distribution functions and also treated them as continuous for the purpose of taking 97.5th percentiles. See Maxwell Memorandum, *op. cit.*

As an example, the "permutation" method can be used to combine EPA's four bituminous distributions, as shown in Figures 1-4, into a new distribution that represents the average emissions from the four best-performing plants. This will represent the behavior of the average, as required by law. Each of the four distributions in Figures 1-4 can be divided into a certain number of equiprobable frequency intervals (such as 20 intervals of 0.05 each). These emission values are equiprobable over time, meaning that they have equal probability of occurrence, for the given plant. In the bituminous subcategory where there are 4 plants, the laws of probability require that all possible combinations ($= 20^4 = 160{,}000$) of these equiprobable emissions values be given equal consideration in creating the frequency distribution for the average emissions from the best-performing plants. In this manner, using all possible combinations, one can readily compile a list of 160,000 equiprobable *average* emission values for the 4 plants. The list of 160,000 averages can be sorted from lowest to highest to produce the new distribution, which is a *cumulative frequency distribution for the average mercury emissions from the given group of 4 plants*, as depicted in Figure 5a. It turns out that EPA (as described above) has chosen the highest value in this list of 160,000 values, corresponding to a percentile greater than 99.999, which is improperly high. However, one can properly choose the 97.5th percentile or any other percentile that may be warranted as a balance between public protection and the "reasonably expected to recur" principle. We consider the 95th percentile to be more protective and thus more appropriate than the 97.5th percentile.

Probabilistic outcomes are often represented by simpler analogs such as tossing coins or rolling dice. In this case, the correct procedure for constructing the cumulative frequency distribution that represents average emissions from the best-performing bituminous plants (as in Figure 5a) is analogous to the process of rolling four dice to generate a distribution curve. However, instead of four standard "hexahedral" dice whose six faces are marked 1, 2, ... 6, we have four "icosahedral" dice whose twenty faces are marked with mercury emissions values for the plants they represent. For example, for the Stockton #1 plant which is shown in Figure 4, the faces of the die would be marked 0.00512, 0.00961, ... 0.60945, where these are EPA's midpoint emission values for each of the twenty equal frequency intervals into which we have divided the distribution.[12] Rolling this twenty-sided die for the Stockton #1 plant will give us results that are a very good match to Figure 4, which is EPA's cumulative frequency distribution for that plant, and rolling *all four* icosahedral dice will give us the combined distribution that we need for the best-performing bituminous plants, as shown in Figure 5a. Granted, we made an arbitrary choice to divide the frequency interval for each plant into twenty equal intervals of 0.05 each. Alternatively, we could choose to divide it into a larger number of intervals, such as 40 intervals of 0.025 each. This would generate a much larger number of points ($= 40^4 = 2.56$ million) for the cumulative frequency distribution for the best-performing bituminous plants, yet the resulting curve will still be similar to the curve already derived in Figure 5a. Alternatively, we could divide the frequency interval for the Mecklenburg plant into 39 equal intervals, the frequency interval for the Dwayne Collier Battle plant into 54 equal intervals, the frequency interval for the Valmont plant into 19 equal intervals, and the frequency interval for the Stockton #1 plant into

[12]Alternatively, instead of using midpoint emission values, we can use other algorithms to assign emission values to each of the twenty equal frequency intervals. The results will be similar.

40 equal intervals, thereby using the intervals shown in EPA's tables for each of these distributions.[13] This will generate a different number of points (= 39*54*19*40 = 1.6 million) for the cumulative frequency distribution for the best-performing bituminous plants. The result, as shown in Figure 5b, will again be similar to the curve already derived in Figure 5a.

For the subbituminous subcategory where there are 4 best-performing plants, the procedure is the same as outlined above. The distribution obtained in this manner for the four best-performing subbituminous plants is shown in Figure 6.

For the lignite subcategory where there are 5 best-performing plants, the procedure is similar. If the 5 individual frequency distributions are divided into 20 equiprobable intervals of 0.05 each, the cumulative frequency distribution for the average of the 5 plants can be constructed from 3.2 million (= 20^5) equiprobable averages. Alternatively, the intervals from EPA's tables can be used. Figure 7 shows the distribution obtained for the five best-performing lignite plants.

In the coal refuse or IGCC subcategory where there are 2 best-performing plants, the procedure is similar. For example, if the 2 individual frequency distributions are divided into 20 equiprobable intervals of 0.05 each, the cumulative frequency distribution for the average of the 2 plants would be constructed from 400 (= 20^2) equiprobable averages.[14] The distributions obtained for the best performing coal refuse and IGCC plants are shown in Figures 8 and 9.

In these cumulative frequency distributions for the *average mercury emissions from the best-performing plants in each subcategory*, as shown in Figures 5-9, the following values occur at the 95th percentile.[15] The average emissions from the best-performing plants will exceed these values only 5% of the time, which may be a reasonable balance between public protection and the "reasonably expected to recur" principle. The following values are thus correctly derived as MACT floor values for existing sources, or in any case show how the derivation should be done, assuming arguendo that key information received from EPA is correct:

Bituminous	0.7 lb/TBtu
Subbituminous	2.2 lb/TBtu
Lignite	6.4 lb/TBtu
Coal refuse	0.12 lb/TBtu
IGCC	6.4 lb/TBtu

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[13]Maxwell Memorandum, *op. cit.*

[14]It should be noted that EPA's emissions data are erroneous and inconsistent for the IGCC subcategory, as seen in the Maxwell Memorandum, *op. cit.*, where both the table and the graph for the Wabash plant fail to match the stated 97.5th percentile value (5.932 lb/TBtu), and where the Wabash and Polk values are transposed in Maxwell's summary tables (pp. 15-16).

[15]See page A3 for both 95th and 97.5th percentile values from these distributions. We find the 95th percentile more appropriate. See also use of 95th percentile in West Associates, *op. cit.*

As already noted, the above values are based on several assumptions such as the acceptability of using variability in both the MACT floor calculation and the compliance method, the choice of 95% as an appropriate percentile, the validity of EPA's subcategorization, and the validity of the cumulative frequency distributions provided by EPA for the best-performing plants in each subcategory. Absent such assumptions, the above values may need to be lowered further. As we will show next, the last of these assumptions is unfounded. We cannot rely on EPA's cumulative frequency distributions, at least not for bituminous-fired and subbituminous-fired plants. The MACT floor for some or all of the subcategories will therefore need to be lower than the values shown above.

Some of EPA's distributions are contradicted by the test data and cannot be correct

Figures 5-9 show the subcategory-specific cumulative frequency distributions that we obtained from EPA's plant-specific cumulative frequency distributions. Distributions of the type shown in Figures 5-9 are a necessary part of any variability-based process for setting MACT standards.

In turn, the subcategory-specific cumulative frequency distributions in Figures 5-9 can be readily converted to *probability density functions* (PDFs) for the five different subcategories. For each of the subcategories, these PDFs show the relative probability that the average emissions from the best-performing plants will be at a given level at any given time.

These PDFs, all based on the cumulative frequency distributions that EPA considers representative of the best-performing plants, can now be compared to the actual test data that EPA collected for the best-performing plants. This is shown in Figures 10-19. In making this comparison, we would expect to find that the PDF for bituminous plants is reasonably similar to the actual test data from the bituminous plants. We would likewise expect to find reasonable similarity between the PDFs and the test data in the other subcategories. Since each PDF can be traced back to EPA's variability analyses, we may expect to see a *broader range* of emission values in the PDF than in the actual test data for each subcategory, but each PDF should substantially overlap the actual test data.

In particular, we would expect to find that EPA's predicted mean (in the PDF) is similar to the mean of the emission test data. This is an important point, given the fact that the MACT floor is required by law to be based on measured emissions and their central tendency (i.e., their average or mean). If EPA chooses to rely on a variability analysis rather than a simple average of the measured emissions, the idea of the central tendency must still be recognizable in the variability analysis, and some version of the actual numerical average must also carry through. The purpose of the variability analysis is not to defeat or eliminate the measured average, but to show how actual operating emissions tend to vary both above and below the measured average.

What we find in Figures 10-19 are substantial mismatches between the PDFs and actual test data in the bituminous and subbituminous subcategories, implying that the PDFs in these two subcategories have no basis in reality. In turn, this means that EPA's cumulative frequency distributions (and their underlying variability analyses) are flawed and cannot be used as the basis

for MACT standards in the bituminous and subbituminous subcategories. In the each of the other subcategories, we see either a less serious mismatch or a reasonably good match between the PDF and the test data.

Figures 10 and 11 show the PDF and the actual test data, respectively, for the best-performing bituminous plants. Figure 10 shows the PDF obtained from EPA's variability analysis, as described above. It has a mean of about 0.34 and a median of about 0.28 lb/TBtu. The curve in Figure 11 shows the normal distribution that represents the emission testing at the best-performing bituminous plants.[16] The black bar along the x-axis of Figure 11 shows the range of actual measured emissions (the four measured values were 0.1062, 0.1074, 0.1268, and 0.1316 lb/TBtu) from which EPA calculated a mean of 0.118 and a standard deviation of 0.0131 lb/TBtu.[17] Comparison of Figures 10 and 11 shows that these two graphs are very different from each other, even though both nominally represent the average mercury emissions from the best-performing bituminous plants. (One represents the average emissions predicted by EPA's variability analysis; the other shows actual emissions testing data collected by EPA.) The curve in Figure 10 should overlap both the curve and the data range in Figure 11, but it does not. The two curves are poorly correlated and almost mutually exclusive. The measured emissions average in Figure 11 (0.118 lb/TBtu) lies at the far left side, at about the 3rd percentile, of the predicted emissions average in Figure 10. This makes no sense; it violates the principle of a central tendency and implies that something is seriously wrong with EPA's cumulative frequency distributions and underlying variability analyses in the bituminous subcategory.

Figures 12 and 13 show the PDF and the actual test data, respectively, for the best-performing subbituminous plants. Figure 12 shows the PDF obtained from EPA's variability analysis, as described above. It has a mean of about 1.32 and a median of about 1.26 lb/TBtu. The curve in Figure 13 shows the normal distribution that represents the emission testing at the best-performing subbituminous plants.[18] The black bar along the x-axis of Figure 13 shows the range of actual measured emissions (the four measured values were 0.4606, 0.6633, 0.7248, and 1.2066 lb/TBtu) from which EPA calculated a mean of 0.738 [or 0.7638] and a standard deviation of

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[16]The normal curve is constructed from the mean (0.118) and standard deviation (0.0131 lb/TBtu) as given by EPA for the four test values listed in the Maxwell Memorandum, *op. cit.* The curve would be similar (with the same mean but with a slightly lower, broader peak) if based on the full set of test data, consisting of three tests per plant, as can be derived from the ICR III database.

[17]69 FR 4673 (January 30, 2004) and Maxwell Memorandum, *op. cit.*

[18]The normal curve is constructed from the mean (0.7638) and standard deviation (0.316 lb/TBtu) as given by EPA for the four test values listed in the Maxwell Memorandum, *op. cit.* The curve would be similar (with the same mean but with a slightly lower, broader peak) if based on the full set of test data, consisting of three tests per plant, as can be derived from the ICR III database.

0.316 lb/TBtu.[19] Comparison of Figures 12 and 13 shows that these two graphs are very different from each other, even though both nominally represent the average mercury emissions from the best-performing subbituminous plants. (One represents the average emissions predicted by EPA's variability analysis; the other shows actual emissions testing data collected by EPA.) The curve in Figure 12 should overlap both the curve and the data range in Figure 13, but it does not. The two curves are very poorly correlated. The measured emissions average in Figure 13 (0.738 or 0.7638 lb/TBtu) lies at the far left side, below the 1st percentile, of the predicted emissions average in Figure 12. This makes no sense; it violates the principle of a central tendency and implies that something is seriously wrong with EPA's cumulative frequency distributions and underlying variability analyses in the subbituminous subcategory.

Figures 14 and 15 show the PDF and the actual test data, respectively, for the best-performing lignite plants. Figure 14 shows the PDF obtained from EPA's variability analysis, as described above. Its mean and median are both about 5.2 lb/TBtu. The curve in Figure 15 shows the normal distribution that represents the emission testing at the best-performing lignite plants.[20] The black bar along the x-axis of Figure 15 shows the range of actual measured emissions (the five measured values were 3.977, 4.004, 4.023, 6.252, and 6.902 lb/TBtu) from which EPA calculated a mean of 5.032 and a standard deviation of 1.429 lb/TBtu.[21] Comparison of Figures 14 and 15 shows that these two graphs are generally similar to each other. The mean in Figure 14 is essentially the same as the mean in Figure 15, as would be expected, since both graphs represent the average mercury emissions from the best-performing lignite plants.

Figures 16 and 17 show the PDF and the actual test data, respectively, for the best-performing coal-refuse plants. Figure 16 shows the PDF obtained from EPA's variability analysis, as described above. Its mean and median are both about 0.09 lb/TBtu. The curve in Figure 17 shows the normal distribution that approximately represents the emission testing at the best-performing coal-refuse plants.[22] The black bar along the x-axis of Figure 17 shows the range of

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[19]69 FR 4673 (January 30, 2004) and Maxwell Memorandum, *op. cit.* Note that these two sources disagree on the mean: The *Federal Register* notice indicates 0.738 while the Maxwell Memorandum shows 0.7638 lb/TBtu.

[20]The normal curve is constructed from the mean (5.032) and standard deviation (1.429 lb/TBtu) as given by EPA for the five test values listed in the Maxwell Memorandum, *op. cit.* The curve would be similar (with the same mean but with a slightly lower, broader peak) if based on the full set of test data, consisting of three tests per plant, as can be derived from the ICR III database.

[21]69 FR 4673 (January 30, 2004) and Maxwell Memorandum, *op. cit.*

[22]The normal curve is constructed from the mean (0.088) and standard deviation (0.0085 lb/TBtu) as given by EPA for the two test values listed in the Maxwell Memorandum, *op. cit.* The curve would be similar (with the same mean but a lower, broader peak) if based on the full set of test data, consisting of three tests per plant, as can be derived from the ICR III database.

actual measured emissions (the two measured values were 0.0816 and 0.0936 lb/TBtu) from which EPA calculated a mean of 0.088 and a standard deviation of 0.0085 lb/TBtu.[23] Comparison of Figures 16 and 17 shows that these two graphs are generally similar to each other. The mean in Figure 16 is similar to the mean in Figure 17, as would be expected, since both graphs represent the average mercury emissions from the best-performing coal-refuse plants.

Figures 18 and 19 show the PDF and the actual test data, respectively, for the best-performing IGCC plants. Figure 18 shows the PDF obtained from EPA's variability analysis, as described above. Its mean and median are both about 4.2 lb/TBtu. The curve in Figure 19 shows the normal distribution that approximately represents the emission testing at the best-performing IGCC plants.[24] The black bar along the x-axis of Figure 19 shows the range of actual measured emissions (the two measured values were 5.3343 and 5.4713 lb/TBtu) from which EPA calculated a mean of 5.403 and a standard deviation of 0.097 lb/TBtu.[25] Comparison of Figures 18 and 19 shows that these two graphs are somewhat similar to each other. The curve in Figure 18 overlaps the mean and test data in Figure 19, as it should. The means are not as well-aligned as in the lignite and coal-refuse subcategories, but not so poorly aligned as in the bituminous and subbituminous subcategories.

In general, EPA may be entitled to create cumulative frequency distributions that accurately reflect both measurement data and variability for the best-performing units. Such distributions may provide a valid basis for setting MACT floor values. However, the bituminous and subbituminous cumulative frequency distributions used by EPA in this proposed rulemaking do not pass muster under *Northeast Maryland*. In setting its MACT floor values, EPA did not use actual data. EPA relied instead on faulty distributions that contradict the data in at least two subcategories. EPA did not and cannot justify this approach as an alternative to using actual testing data.

Much concern has been expressed about this proposed rule in the five months since it was published in the *Federal Register* on January 30, 2004. One frequently repeated concern involves the large discrepancy between EPA's proposed MACT floor values and the measured averages on which they were purportedly based. For example, in the bituminous subcategory, the seventeen-fold discrepancy between EPA's proposed MACT floor of 2.0 lb/TBtu and its measured emissions average of 0.118 lb/TBtu was considered to be an obvious violation of common sense. Using more rigorous methods, we have shown here that the commonsense view is correct. Other commenters have conducted their own "reality checks" for the same general

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[23]69 FR 4673 (January 30, 2004) and Maxwell Memorandum, *op. cit.*

[24]The normal curve is constructed from the mean (5.403) and standard deviation (0.097 lb/TBtu) as given by EPA for the two test values listed in the Maxwell Memorandum, *op. cit.* The curve would be similar (with the same mean but a lower, broader peak) if based on the full set of test data, consisting of three tests per plant, as can be derived from the ICR III database.

[25]69 FR 4673 (January 30, 2004) and Maxwell Memorandum, *op. cit.*

purpose, and they have likewise found serious problems with EPA's cumulative frequency distributions. See, for example, comments submitted on this proposed rule by the New Jersey Department of Environmental Protection (DEP), especially their Appendix B.

Conclusion

EPA claims that the mercury emissions from the best-performing plants are not adequately represented by the actual testing data, and that these emissions have variability patterns that are faithfully represented by EPA's cumulative frequency distributions for each plant. We in turn have faithfully converted EPA's distributions into other distributions, including the PDFs. Having done this, we find that the PDFs don't match the actual testing data in the bituminous and subbituminous subcategories. Since the PDFs are based on EPA's bituminous and subbituminous variability analyses, we conclude that those variability analyses have no basis in reality and cannot be used to set MACT standards in these two subcategories. In accordance with *Northeast Maryland*, EPA must use actual testing data to set the MACT floors in these two subcategories. This means that the MACT floor must be set at 0.118 lb/TBtu for existing bituminous sources and at 0.738 lb/TBtu for existing subbituminous sources, reflecting the mean values of actual emission testing data in those two subcategories.[26] EPA has provided no alternative justification, and no other rational basis, for a higher MACT floor value in either subcategory.

In the lignite, coal refuse, and IGCC subcategories, EPA's variability analyses may be allowable if other issues are resolved. These other issues include "double-counting" (i.e., the question of whether EPA can account for variability twice, once in its rolling-average compliance method and again in its MACT standard) as well as the New Jersey DEP's technical criticisms of EPA's variability analyses. If EPA's variability analyses are allowable in these three subcategories, EPA must use the distributions shown in Figures 7-9, and the MACT floor values must be set at an appropriate percentile (e.g., 95%) on those distributions.

Assuming that issues such as "double-counting" are resolved, and that MACT standards are set at the 95th percentile in Figures 7-9 for the lignite, coal refuse, and IGCC subcategories, but that the simple average test values must be used in the bituminous and subbituminous subcategories for reasons stated above, the MACT floor values for existing sources in all subcategories would be:

Bituminous	0.118 lb/TBtu
Subbituminous	0.738 lb/TBtu
Lignite	6.4 lb/TBtu
Coal refuse	0.12 lb/TBtu
IGCC	6.4 lb/TBtu

We estimate that the mercury emissions from existing U.S. coal-fired plants operating under these standards would be reduced to approximately 6 tons per year. This would be a reduction of

[26] 69 FR 4673 (January 30, 2004).

approximately 88% from the current annual emission level of about 48 tons.

Assuming that issues such as "double-counting" are not resolved, so that the simple average test values must be used in all subcategories, the MACT floor values for existing sources would be:

Bituminous	0.118 lb/TBtu
Subbituminous	0.738 lb/TBtu
Lignite	5.032 lb/TBtu
Coal refuse	0.088 lb/TBtu
IGCC	5.403 lb/TBtu

We estimate that the mercury emissions from existing U.S. coal-fired plants operating under these standards would be reduced to approximately 5 tons per year. This would be a reduction of approximately 90% from the current annual emission level of about 48 tons.

Given the requirements of the Clean Air Act, and given the information provided by EPA in this proposed rulemaking, we do not believe that EPA can promulgate any MACT floor values for existing sources that differ substantially from the two sets of standards listed above, either of which would achieve roughly 88% to 90% reduction of power-plant mercury emissions.

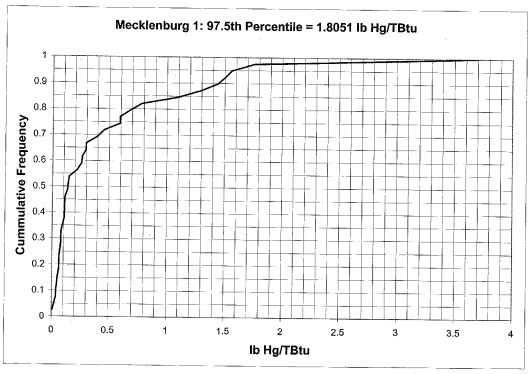


Figure 1

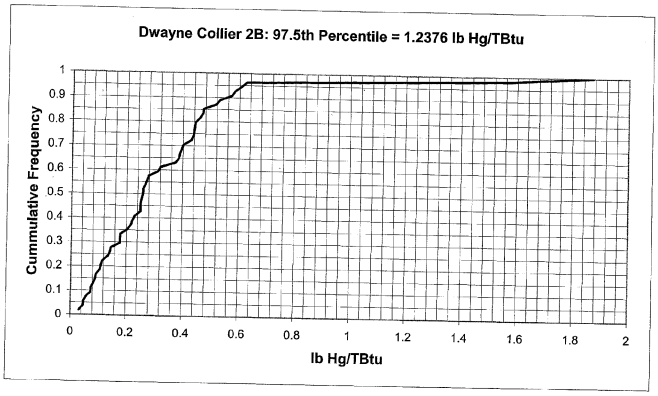
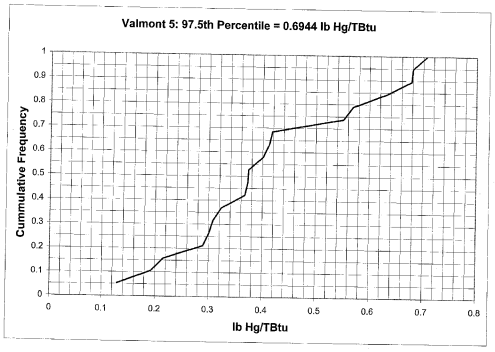


Figure 2



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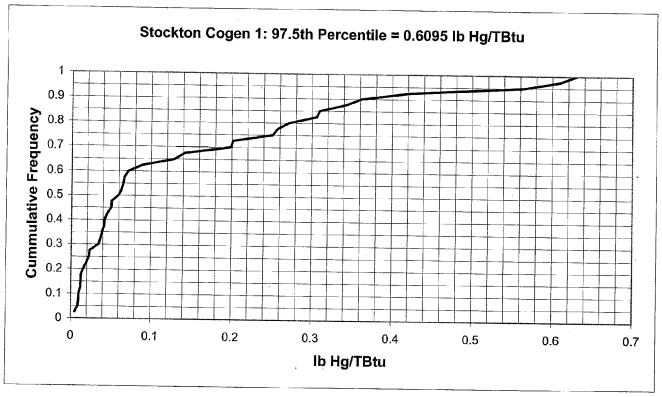

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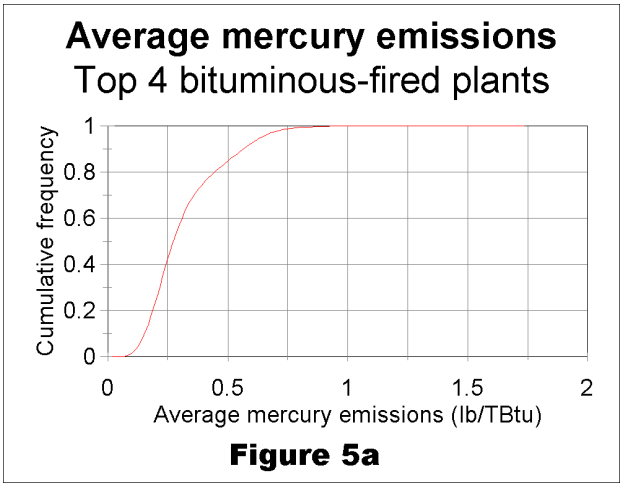
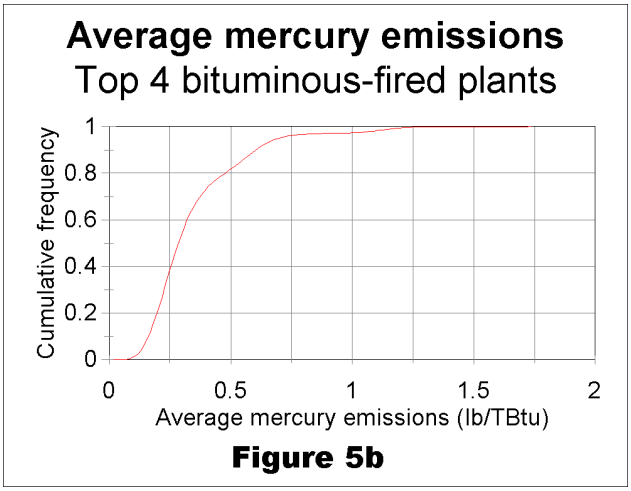


Figure 5a



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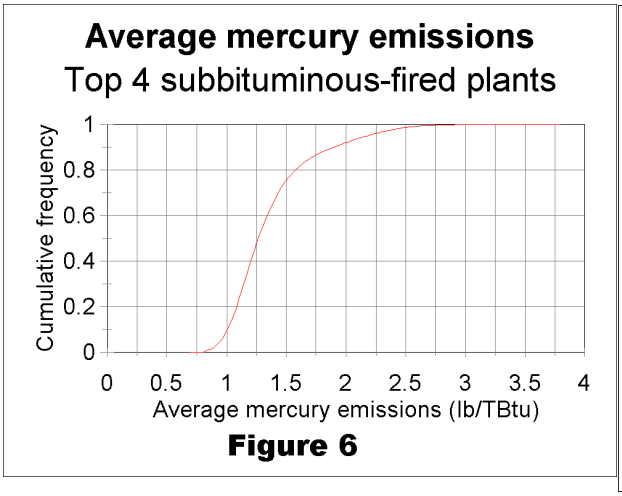

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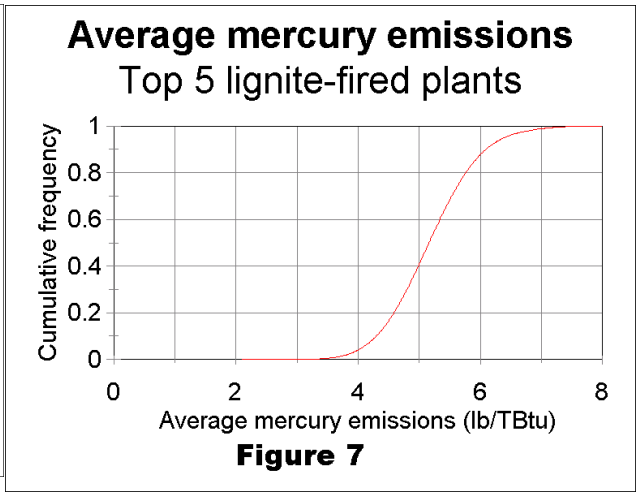

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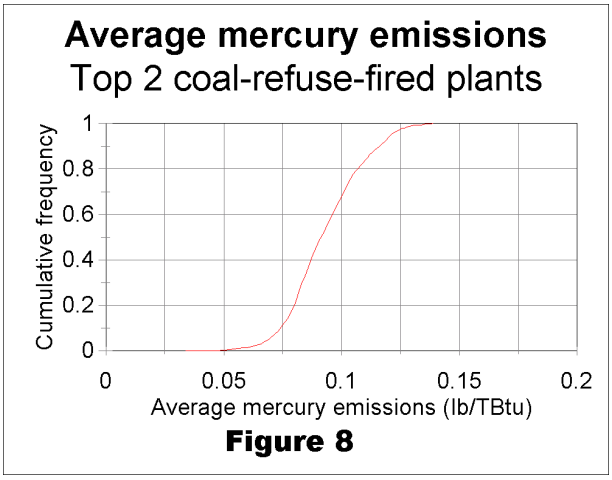

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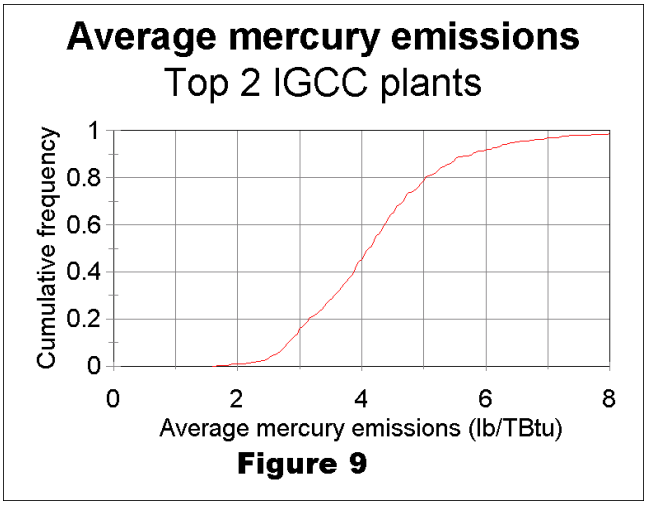

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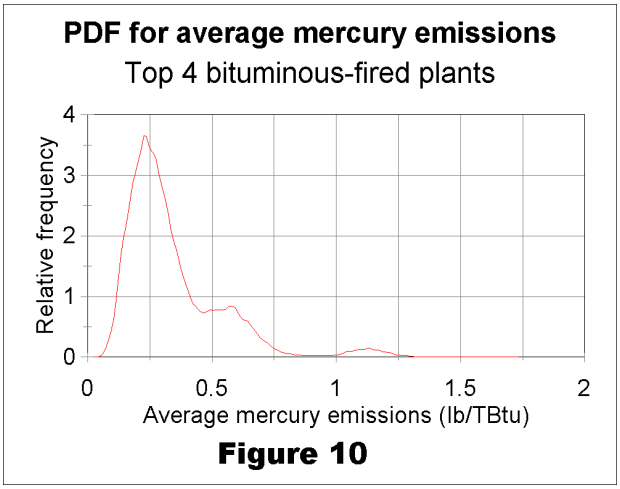

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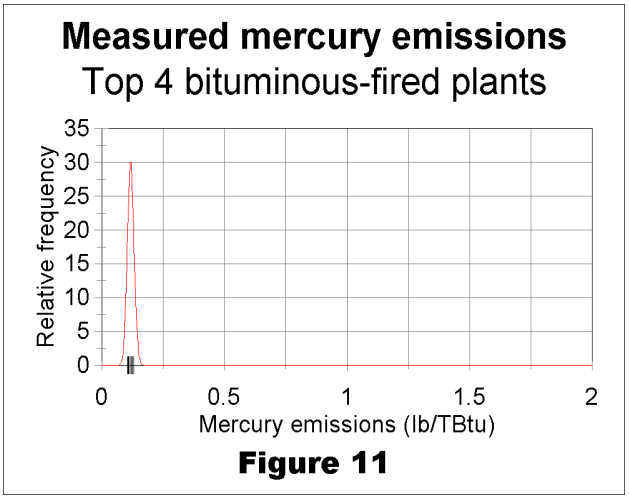

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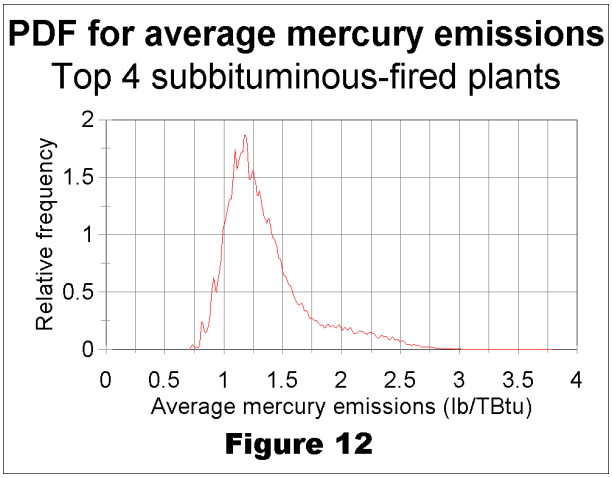

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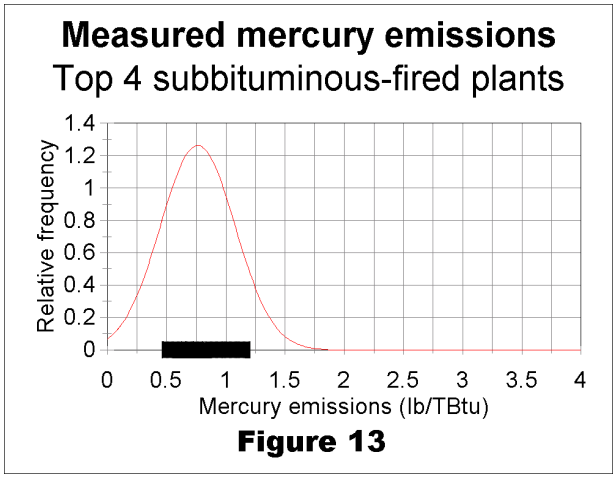

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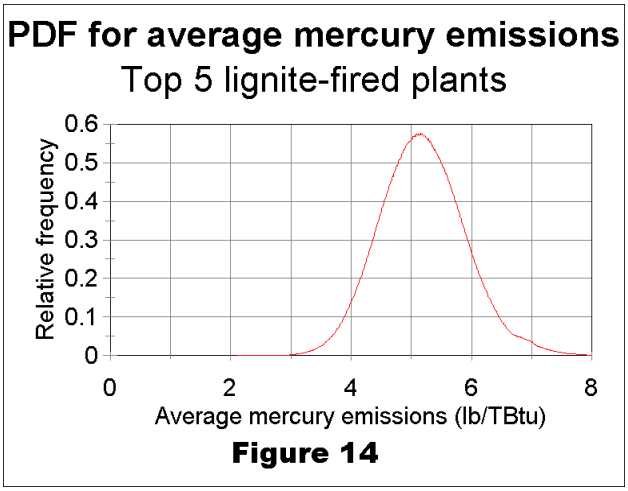
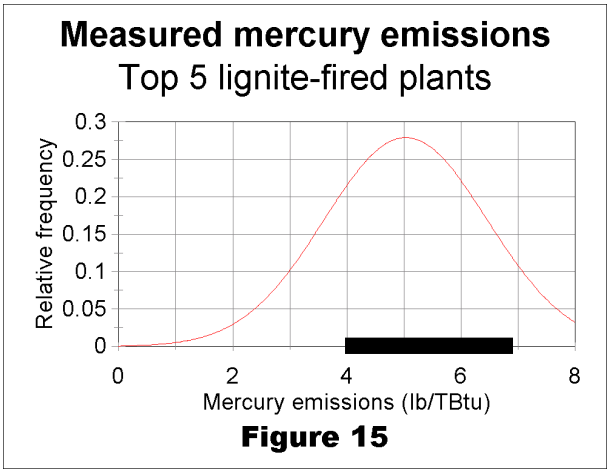


Figure 14



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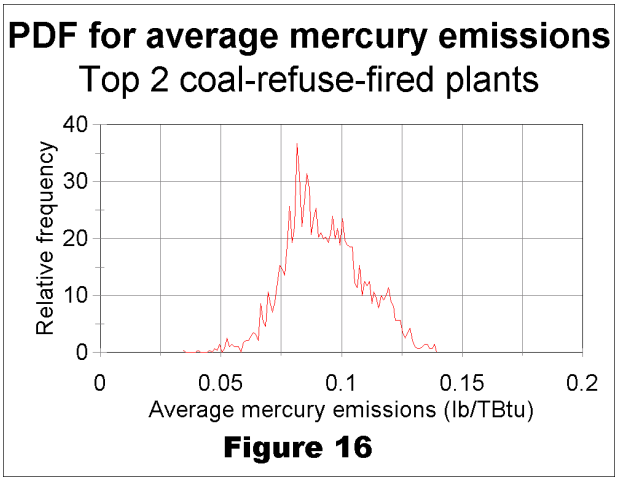

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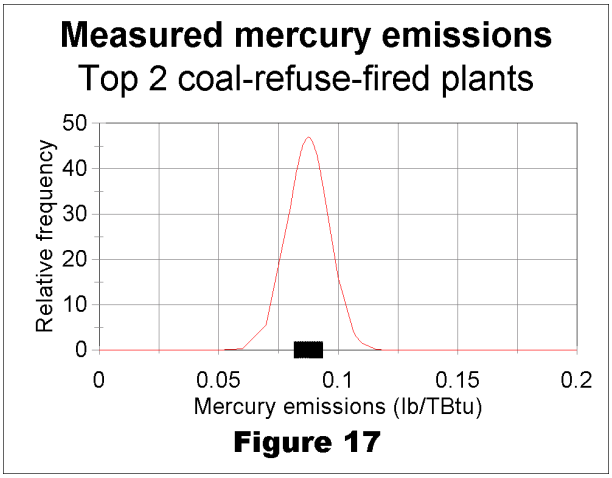

Figure 17

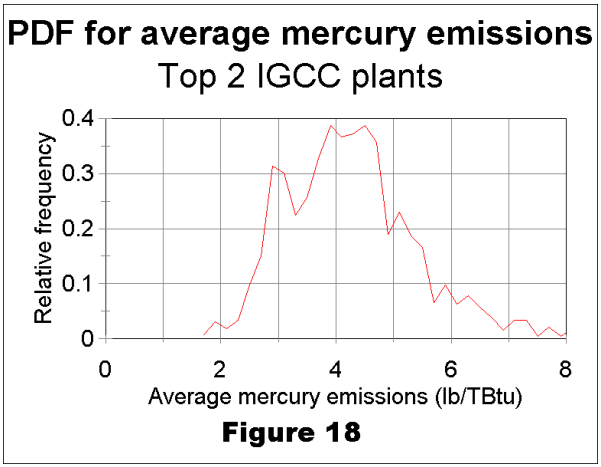

Figure 18

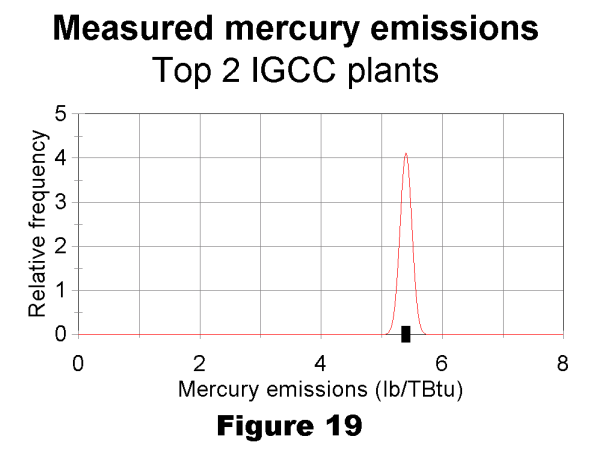

Figure 19

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November 3, 2003

Mr. Jeffery Holmstead
Assistant Administrator for Air and Radiation
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Mr. Holmstead:

In August of 2001, USEPA formed a Utility MACT Working Group under the existing Permits, New Source Review, and Toxics Subcommittee of the Clean Air Act Advisory Committee (CAAAC), established under the Federal Advisory Committee Act (FACA). This working group was formed with an original constituency of six representatives of State/local/tribal agencies, eight representatives of environmental organizations, and sixteen representatives of affected sources/fuel producers and suppliers/labor groups. The working group met a total of fourteen times, and devoted many hours to the identification of issues and development of stakeholder recommendations. As co-chair of the working group, I delivered the working group's recommendations to the full CAAAC at its October 2002 meeting. One of the key recommendations of the working group was that EPA conduct runs of the Integrated Planning Model (IPM) using the stakeholder recommendations as model inputs. This recommendation was supported by the full CAAAC and approved by you at the October meeting.

Subsequent to the October presentation, the working group met for discussions in March of 2003 and scheduled a meeting for April 15, 2003 to review the results of the recommended IPM runs. Several stakeholders (Cinergy on March 26, 2003 and The Clean Energy Group on March 28, 2003) submitted specific recommendations regarding model inputs. Then, quite abruptly, EPA notified the working group on April 1, 2003 that the scheduled meeting was cancelled. There have been no further communications to the working group since the April 1 notification, although I did read a quote by Bill Wehrum in an October 25, 2003 article published in the Atlanta Journal-Constitution that, "the April 15 meeting was canceled and the advisory committee was disbanded because it had completed its work when it submitted its proposals."

On behalf of the working group, and as the working group co-chair, I request that EPA conduct the requested IPM runs and provide the results to the working group for discussion. Contrary to the statement in the Atlanta Journal-Constitution, the working group has not disbanded nor completed its work. Once EPA has conducted the IPM runs, and the working group has reviewed and discussed the results, then we will have completed our work.

Thank you for your serious consideration of this request.

Sincerely,

John A. Paul

John A. Paul
Supervisor of RAPCA and Utility MACT Working Group Co-Chair

c: Utility MACT Working Group
Sally Shaver, Utility MACT Working Group EPA Co-chair

Ann Berwick <aberwick@mjbradley.com>

03/15/04 03:19 PM

To: Jim.Milkey@ago.state.ma.us
cc:
Subject: Fwd: Subgroup Meeting on April 15th

>Date: Thu, 03 Apr 2003 08:48:25 -0500
>From: Maxwell.Bill@epamail.epa.gov
>Subject: Subgroup Meeting on April 15th
>To: aberwick@mjbradley.com, aweeks@clnatf.org, bsf@vnf.com,
> c.mathai@pinnaclewest.com, debra.jezouit@bakerbotts.com,
> dennis.james@falkirk.com, dlamb1@txu.com, Dan.Weiss@Cinergy.COM,
> Harmon.Darrel@epamail.epa.gov, Stackhouse.Debbie@epamail.epa.gov,
> Donald.Rose@ec.gc.ca, feeley@netl.doe.gov, grimley.william@epamail.epa.gov,
> hall.bob@epamail.epa.gov, hness@lignite.com, jnovak@epri.com,
> Wilkins.John@epamail.epa.gov, llevin@epri.com, moody@wallstreetguy.com,
> MOpalinski@seminole-electric.com, nndharmarajan@aep.com, qshea@eei.org,
> scf@vnf.com, sdavis@ccap.org, tipaay@aol.com
>X-Mailer: Lotus Notes Release 5.0.9a January 7, 2002
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>
>FYI.
>
>Bill Maxwell
>Combustion Group/Emission Standards Division
>C439-01
>U.S. EPA
>Research Triangle Park, NC 27711
>919-541-5430
>----- Forwarded by Bill Maxwell/RTP/USEPA/US on 04/02/2003 07:49 AM
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>
> Sally
> Shaver
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> To: bbecker@sso.org,
> btyndall@cinergy.com, chgoodma@southernco.com,
> 04/01/2003 06:05 cunninghamda@coned.com,
> davidss@simginc.com, dschanba@tnrcc.state.tx.us,
> PM emtrisko@intrepid.net,
> eric.uram@sierraclub.org, frank.cassidy@pseg.com,
> GSchaefer@archcoal.com,
> jeff@jeffreysmithlaw.com, lzeugin@hunton.com,
> mkeating@mebtel.net,
> mshore@environmentaldefense.org, MRossler@eei.org,
> pamar@nescaum.org,
> paulja@rapca.org, pmraher@hhlaw.com, psilva@nrdc.org,
> Peter@petejonker.com,
> rmidulla@seminole-electric.com,
>
>robert.lacount@neg.pge.com, robert.wyman@lw.com, rwilsonnes@aol.com,
> stadler@nwf.org,

> subracom@aol.com, tnatan@environet.org,
>
>william.bumpers@bakerbotts.com, wosulliv@dep.state.nj.us, Jeff
>   Holmstead/DC/USEPA/US@EPA
>
>   cc:
> bill.wemhoff@nreca.org, CLAUDIA.O'BRIEN@LW.com,
>   djohnson@westar.org,
> Ellen Brown/DC/USEPA/US@EPA, jpew@earthjustice.org,
>   jstanton@environet.org,
> LSMONROE@southernco.com, Mark.Brownstein@pseg.com,
>   Maryjo
> Krolewski/DC/USEPA/US@EPA, Paul Rasmussen/DC/USEPA/US@EPA, Rick
>   Vetter/RTP/USEPA/US@EPA,
> RobertJ Wayland/RTP/USEPA/US@EPA, Steve
>   Page/RTP/USEPA/US@EPA,
> Teri Porterfield/RTP/USEPA/US@EPA,
>   wehrum.bill@epa.gov,
> wilson.nancyh@epa.gov, (bcc: Bill
>   Maxwell/RTP/USEPA/US)
>
>   Subject: Subgroup Meeting
> on April 15th
>
>
>
>
>
>Dear Subgroup:
>
>Unfortunately, we will not be able to complete the model runs in time
>for the April 15th meeting. Therefore, we will not be holding the
>meeting on that date. I regret any inconvenience that this may cause.
>We will get back to you regarding a future meeting.
>
>Again I apologize for any inconvenience.
>
>
>Sally Shaver

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

DEC 23 2003

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

John A. Paul, Supervisor
Regional Air Pollution Control Agency
117 South Main Street
Dayton, Ohio 45422-1280

Dear Mr. Paul:

Thank you for your letter of November 3, 2003, to Jeffrey Holmstead, Assistant Administrator for Air and Radiation, in which you urge the U.S. Environmental Protection Agency (EPA) to conduct integrated planning model (IPM) runs as suggested by the work group established on the project to develop maximum achievable control technology (MACT) standards for the electric utility industry. I appreciate your support on this important issue.

As you are aware, we signed the proposed rule on Monday, December 15, 2003, which outlines two alternative approaches (both section 111 and section 112 regulations) for limiting emissions of mercury (Hg) and nickel (Ni) in all 50 States. The proposal should appear in the Federal Register in late January 2004. In addition, on December 17, 2003, we proposed the Interstate Air Quality Rule (IAQR), which is designed to dramatically reduce and permanently cap emissions of sulfur dioxide (SO_2) and nitrous oxides (NO_x) in 29 eastern States. In the interim, you may review the contents of both rule packages on our website: http://www.epa.gov/.

The proposed IAQR, coordinated with the implementation of the proposed section 111 approach for regulating Hg from utility units, will provide the EPA a multipollutant strategy for achieving significant emissions reductions from this sector. We believe that the proposed multipollutant approach to regulating SO_2, NO_x, and Hg (and Ni) from the utility sector provides the most cost-effective and environmentally beneficial strategy for the Agency. The incentives for early reductions provided by a market-based cap-and-trade program far outweigh the abilities of a command-and-control program (i.e., section 112 MACT approach) for achieving significant emissions reductions from these sources.

In designing these environmental programs, the Agency relied on all available ambient data and technical/economic/modeling analyses. In fact, the information contributed by the Federal Advisory Committee Act work group, which you co-chaired along with Sally Shaver of my staff here at EPA, was instrumental in helping the Agency formulate the proposed rules to

Attachment D

significantly reduce SO_2, NO_x, Hg and Ni emissions from utility sources. The Agency is committed to protecting the public health of all citizens and the environment. We believe that the programs outlined above will provide the most cost-effective and environmentally beneficial approach to ensuring the continued welfare of the American public and the environment. These coordinated programs will work in concert to reduce the emissions of SO_2, NO_x, Hg and Ni from the utility sector, and ultimately lead to reduced deposition to the environment and an improvement in the water quality of our lakes, rivers, coastal waters and oceans.

Again, thank you for your letter. We look forward to continued input from stakeholders as we move into the public comment period.

Sincerely,

/Henry Thomas/

Stephen D. Page
Director
Office of Air Quality Planning
and Standards

Los Angeles Times
latimes.com.

http://www.latimes.com/news/nationworld/nation/la-na-mercury16mar16,1,5139740.story

THE NATION

Mercury Emissions Rule Geared to Benefit Industry, Staffers Say

Buffeted by complaints, EPA Administrator Michael Leavitt calls for additional analysis.

By Tom Hamburger and Alan C. Miller
Times Staff Writers

March 16, 2004

WASHINGTON — Political appointees in the Environmental Protection Agency bypassed agency professional staff and a federal advisory panel last year to craft a rule on mercury emissions preferred by the industry and the White House, several longtime EPA officials say.

The EPA staffers say they were told not to undertake the normal scientific and economic studies called for under a standing executive order. At the same time, the proposal to regulate mercury emissions from coal-burning power plants was written using key language provided by utility lobbyists.

The Bush administration has said that the proposed rule would cut mercury emissions by 70% in the next 15 years, and is tied to the president's "Clear Skies" initiative. Critics say it would delay reductions in mercury levels for decades at a risk to public health, while saving the power and coal industries billions of dollars.

Studies designed to address such questions are the ones that were not conducted.

EPA veterans say they cannot recall another instance when the agency's technical experts were cut out of developing a major regulatory proposal.

The administration chose a process "that would support the conclusion they wanted to reach," said John A. Paul, a Republican environmental regulator from Ohio who co-chaired the EPA-appointed advisory panel.

He said its 21 months of work on mercury was ignored.

"There is a politicization of the work of the agency that I have not seen before," said Bruce C. Buckheit, who served in major federal environmental posts for two decades. He retired in December as director of the EPA's Air Enforcement Division, partly because he felt enforcement was stymied. "A political agenda is driving the agency's output, rather than analysis and science," he said.

Russell E. Train, a Republican who headed the EPA during the Nixon and Ford administrations, said: "I think it is outrageous. The agency has strayed from its mission in the past three years."

Buffeted by complaints about the mercury proposal from both within and outside the agency, EPA Administrator Michael O. Leavitt in recent days has called for additional analysis. EPA staffers say they have been asked to suggest possible comparative studies for the agency to run, much like the analysis that, they say, they were ordered not to conduct last year.

"The process is not complete nor is the analysis," Leavitt said in an interview Monday. "I want it done well and I want it done right. And I want it done in a way that will maximize the level of reductions" based on the available technology.

Leavitt noted that while the EPA expressed a clear preference for a more flexible, market-driven plan, its proposed mercury rule also includes an alternative approach using a traditional regulatory system requiring all plants to install pollution controls.

Leavitt portrayed the new period of inquiry as part of the "normal process" of rule-making, noting that the agency had so far filed only a provisional rule. But veteran regulators say it is unusual to propose a rule first and do extensive comparative studies later — unless new information emerges.

Leavitt said he could not speak to what happened at the agency before he arrived in November, but that he has had "no pressure to do anything other than the right thing from the White House."

Christie Whitman was the EPA administrator when the career employees say they were told not to conduct the analysis. She left the agency in June, six months before the proposed rule was announced.

"I did not know that we were cutting a process short or shortchanging the analysis," Whitman said in an interview Monday. Had she heard such allegations, she said, she would have intervened.

Five current career employees — all speaking on condition they not be named for fear of job retribution — and several former officials provided a behind-the-scenes account of the EPA's decision-making in the mercury case.

A cascade of studies in recent years has cast mercury as an escalating health danger, although its threat to the human nervous system has been known since at least the 19th century. That is when hat makers in England literally went mad from exposure to a mercury compound used in processing felt — hence the expression "mad as a hatter."

Today, the use of mercury in U.S. manufacturing is tightly restricted. But there has been no strict limit on mercury released into the atmosphere from the nation's 1,100 coal-fired power plants, the largest single source of mercury in the U.S.

Mercury occurs naturally in the environment, in fossil fuels like coal, and is released into the atmosphere when those fuels are burned. When mercury particles and gases drop into water, some turn into a more toxic form known as methyl mercury, which then enters the aquatic food chain. People are exposed to mercury chiefly by eating fish.

In 2000, a National Research Council study commissioned by Congress estimated that each year about 60,000 children born in the United States could have neurological problems because they were exposed to mercury before birth. Exposure could lead to developmental problems.

In the past few months, there has been a flurry of other disturbing reports, most focusing on the threat to the fetus from mothers eating fish with elevated levels of mercury. In December, the Food and Drug Administration warned all women of child-bearing age to limit their intake of tuna and other fish because of concern about mercury.

Coal and utility executives don't dispute the dangers of mercury, but they question how much of the threat comes from power plants. And they warn that overly aggressive regulation of the nation's coal-fired plants could damage those industries and the economy and endanger already stretched supplies of electricity.

In its final days, the Clinton administration determined mercury to be a toxic substance and thus subject to strict regulation under the Clean Air Act. The administration's decision required that the EPA propose standards for utility plant emissions by the end of 2003.

As part of this process, the EPA selected a 21-member federal advisory panel in 2001 to make recommendations to the agency.

Mercury was on the agenda at a staff meeting last spring at EPA headquarters presided over by Jeffrey R. Holmstead, a lawyer who represented industry interests on air pollution issues before Bush appointed him to run the EPA's Office of Air and Radiation. Several of the staff members said they had expected to discuss plans to carry out comparative studies of proposals to reduce mercury emissions. The studies had been requested by the federal advisory panel.

The studies were designed to examine the effects of mercury regulation on energy markets, electricity prices and public health. This analysis, generated through EPA computer models, typically becomes the basis upon which agency officials — and outsiders — weigh alternatives.

But William Wehrum, a senior advisor to Holmstead who also represented industry clients before joining the Bush administration, told the dozen or so staffers that comparative studies would be postponed indefinitely.

"I was floored," said one participant, who has served several administrations. "We pointed out that the studies were required ... that the data runs were promised to a federal advisory committee."

Holmstead did not respond to expressions of concern, participants said. "There was an awkward silence," one recalled.

After the meeting, two staffers said, Holmstead informed them that the studies would not be conducted partly because of "White House concern."

Holmstead and Wehrum declined repeated requests for comment. On Monday, Leavitt expressed full confidence in them.

Paul, the co-chairman of the advisory committee, which was made up of regulators, environmentalists and industry representatives, says his panel was promised the comparative data last March, but its next meeting was canceled by the EPA and the group never met again.

"We were cut off without any warning or explanation," said Paul, director of the Ohio Regional Air Pollution Control Agency in Dayton, who says he voted for Bush in 2000.

Lisa Heinzerling, a professor at Georgetown University Law Center who specializes in regulatory law and has studied the mercury proposal, said the "EPA's analytical work on mercury was extraordinarily thin."

Even as career staffers and some members of the EPA's advisory panel felt that their contributions to the mercury proposal were being restricted, utility industry lobbyists were given extraordinarily direct input.

When the Bush administration took office in 2001, slowing mercury regulation was a priority for the coal and power industries. Documents obtained under the Freedom of Information Act show that the coal industry dispatched lobbyists to meet with staff of Vice President Dick Cheney's Energy Task Force on mercury and other pollution issues.

Since 1999, coal and electricity companies and executives have donated $40 million to Republican candidates and committees, including $1.3 million directly to Bush campaigns, according to figures compiled by the Center for Responsive Politics.

The administration has responded to key industry priorities: It ended U.S. participation in the Kyoto process to reduce global warming and relaxed regulations that required the power industry to install pollution controls when renovating its plants.

The administration's proposed mercury rule, published in the Federal Register in December, contains numerous paragraphs of verbatim language supplied by two separate industry advocates.

Several complete paragraphs were lifted from three memos provided by Latham & Watkins, a national law firm whose clients include large coal-fired utility plants.

Both Holmstead and Wehrum are former Latham & Watkins attorneys.

More seriously, according to critics, the proposal also includes exact language provided by West Associates, a research and advocacy group representing 20 power and transmission companies in California and other Western states.

The West language suggests a standard for determining likely mercury emissions at power plants.

That standard — largely incorporated by the EPA — is enormously beneficial to the industry, according to S. William Becker, executive director of the State and Territorial Air Pollution Program Administrators organization, which represents state and local regulators in Washington.

Leavitt said use of lobbyists' memos in this fashion is not consistent with "normal agency procedure" and that he would prefer that wholesale use of any group's language be disclosed.

Under the proposal, the government would set a national annual cap on emissions but then permit individual companies to choose whether to reduce their own emissions or buy "credits" from other companies that do.

This is designed to provide an incentive to cut emissions nationwide, without limiting them at each individual facility. This approach was widely hailed in the 1990s for reducing power plant emissions that produced acid rain, but critics say it would be ill advised for a toxin such as mercury.

Some scientists believe mercury, which is heavier than acid-rain-producing sulfur dioxide and nitrogen oxide, will remain close to the point of emission, creating "hot spots" of potentially high levels of mercury contamination near power plants. Power plants in communities with high levels of mercury could opt to buy credits rather than spend the money to make reductions.

The EPA's own Children's Health Protection Advisory Committee, which includes academic, industry and environmental professionals, wrote on Jan. 26 that "the cap and trade program, as proposed, may not address existing hot spots and may create new local hot spots for mercury."

Overall, the committee said the Bush proposal "does not go as far as is feasible to reduce mercury emissions from power plants, and thereby does not sufficiently protect our nation's children."

Today, coal-fired power plants pump out about 48 tons of mercury annually. The Clinton administration order under the Clean Air Act would have mandated reducing the amount produced by coal-fired power plants by as much as 90%, to about 5 tons annually by 2008.

The Bush Clear Skies plan, as modified on Capitol Hill, calls for a national cap of 34 tons in 2010, a level that wouldn't require any extra spending by the industry because it would be automatically reached if utilities added scrubbers and other equipment to comply with the Clear Skies rules regulating nitrogen oxide and sulfur dioxide emissions.

Opponents of the Bush plan contend that setting a lower cap in the near future would encourage innovation by assuring a market for the new equipment. But officials of the coal-fired utility industry argue that forcing rapid adoption of that technology would be so expensive that it would lead electric generators to shift from coal to natural gas.

"The result would be increased electricity prices and higher costs for home heating, food and a host of consumer and industrial products," said Scott Segal, director of a coal utility trade association.

Segal and the coal utility companies that make up the Electric Reliability Coordinating Council back the administration's market-based approach as the most effective way to reduce emissions of mercury and other pollutants without harming the economy.

Meantime, longtime EPA employees say the administration exaggerated data on the effectiveness of its proposed rule, which would take effect in December.

In announcing the mercury plan, the EPA said it would reduce mercury emissions from power plants by 70% by 2018.

However, the EPA's own database shows that emissions would, at best, be reduced by only about half by then. And EPA models suggest that the 70% goal may not be reached until 2025, if ever.

In recent days, the administration has backed away from those claims. The 70% reduction will be achieved when the rule is "fully implemented," Leavitt said Monday, without providing a date.

EPA will spotlight cap-and-trade approach in new mercury analysis

Darren Samuelsohn, *Greenwire* senior reporter

(This story was updated at 1:15 p.m.)

The U.S. EPA will focus a new round of analysis on the proposed mercury standard for coal-fired power plants solely on the cap-and-trade approach it favors, again bypassing examination of the source-by-source alternative that state air regulators and environmentalists say they were promised by the agency more than a year ago.

Jeff Holmstead, EPA's top air pollution official, said yesterday that the agency will take a closer look at mercury pollution control technologies and other variables, but only in the context of the trading program it envisions.

Holmstead also said the modeling long sought by members of an EPA Federal Advisory Committee is not necessary because the Clean Air Act approach for mercury advocated by some members of the now-disbanded committee relies on pollution control technologies that will not be commercially available by the deadline for utilities to reduce emissions.

Holmstead's comments add substance to EPA Administrator Mike Leavitt's announcement last week that the Bush administration would conduct additional modeling of its mercury rule because, according to a Leavitt spokeswoman, the agency "intend[s] to do it right."

Leavitt and other top EPA officials, along with electric utility industry representatives, have said further analysis of the mercury standard is a normal progression in the rulemaking process. But critics of the Bush administration charge it is a strategic move to shore up a poorly crafted rule destined to face legal challenges early next year.

Former EPA Administrator Carol Browner last week called the Bush administration's mercury proposal "fundamentally flawed" and probably unfixable given the Dec. 15 deadline that EPA faces to issue a final standard.

In a second interview today, Holmstead described as "scientifically indefensible" the suggestion that conventional EPA models could be used to examine regulatory approaches other than trading. "They're not constrained by either the facts or the law," Holmstead said of the administration's critics, adding that those who oppose the cap-and-trade concept are trying to elevate the advisory panel's role far beyond its official charter.

"We were not shortchanging the analysis," Holmstead said. "It's incorrect to suggest that we were."

In October 2002, Holmstead promised members of the EPA-sponsored Federal Advisory Committee that modeling would be done for several scenarios under which mercury emissions would be subject to Maximum Achievable Control Technology (MACT), a Clean Air Act standard that applies to all of the nation's coal- and oil-fired power plants. In April 2003, however, EPA canceled the advisory panel's next scheduled meeting and the group has not met since.

Holmstead said in an interview last May that the additional MACT studies were "not as high a priority" for the agency because similar modeling was being done for the Bush administration's Clear Skies legislation that was under consideration on Capitol Hill (*Greenwire*, May 12, 2003).

In today's interview, Holmstead said EPA refused the modeling requests from the advisory committee members after discussions with top White House officials, including Council on Environmental Quality Chairman James Connaughton and Office of Information and Regulatory Affairs Director John Graham.

When Congress did not move on the Clear Skies legislation for power plants in 2003, EPA set in motion some of its Clear Skies concepts through a pair of regulations aimed at mercury, sulfur dioxide and nitrogen oxides. The mercury rule, unveiled last December, surprised many because it indicated the Bush administration's preference for trading over the MACT approach. While trading is widely favored by the utility industry, environmentalists and some state officials maintain MACT is the only approach allowed under the Clean Air Act.

The shift in direction on mercury has sparked considerable controversy, particularly as lawmakers try to piece together events that led to the administration's decision. Last summer and fall, EPA officials were questioned repeatedly about the mercury MACT studies.

On her last day in office last June, former EPA Administrator Christie Whitman sent a **letter** to Rep. Henry Waxman (D-Calif.) indicating the agency would be "conducting a limited number of analyses based on those scenarios that are believed to represent viable alternatives for a MACT standard." Whitman said EPA would convene another Federal Advisory Committee meeting when the MACT studies were finished, adding that the work would be complete before the proposed rule's Dec. 15, 2004, deadline. Holmstead today acknowledged that he helped draft Whitman's letter.

Whitman's assurances did not appear to satisfy Waxman, who along with Senate Environment and Public Works Committee ranking member Jim Jeffords (I-Vt.) questioned Holmstead one month later about EPA's allocation of resources between the agency's statutory requirements and its legislative plans.

In a **letter** to the assistant administrator for the Office of Air and Radiation, the lawmakers asked for an accounting of EPA expenses for modeling Clear Skies and its alternative plans, as required under the National Environmental Policy Act. They also sought a detailed review of regulations the agency was under court order or statuary deadline to complete, but whose implementation was delayed in favor of Clear Skies (*Greenwire*, July 16, 2003).

In an interview last week with the *Los Angeles Times*, Whitman said that if she had known the analysis was not being done, she would have intervened.

Leavitt joined the Bush administration in November after EPA had already spent considerable time on the mercury issue. He defended the trading plan from the start, but in recent weeks has voiced interest in reviewing additional data. "He's asking questions that need to be asked," said EPA spokeswoman Cynthia Bergman. "He's asking for analysis that needs to be done. We intend to do it right."

But John Paul, director of the regional air pollution control agency in Dayton, Ohio, and one of the leaders of the federal advisory panel, said yesterday he continues to press EPA as to the status of the MACT studies. "My impression is control technologies would be available down the road," he said, arguing that the modeling runs should "speak for themselves" as to which approach is the best.

Paul, along with environmentalists, say EPA has shelved the MACT study because further analysis would show emissions can be reduced at an economically viable rate and would be more environmentally beneficial than the Bush administration's Clear Skies standards. "That's the impression that's left," Paul said. "They're the only ones that can put that to rest."